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ABSTRACT

Undertaken at the request of the Ad Hoc Statewide Automation Committee, this report provides a common understanding for Maine librarians of current library networking and how it might apply to Maine. The current status of Maine libraries and their cooperative and automation activities is summarized; resource-sharing in other states is examined; and the development of a plan for resource-sharing in Maine is discussed, including alternatives for the implementation of retrospective conversion procedures. A description of the recommended statewide network includes plans for a star network with five separate but linked automated systems, or nodes, located throughout the state, each of which would be a minicomputer-based automation center with a regional or interest-group center, and each of which would have a transparent interface with the other nodes. Discussions also include the current status and future needs for microcomputers in libraries, online reference searching, and serials and document delivery. Finally, short- and long-term priorities for the development of the network are enumerated, and plans for the future are considered. The text is supplemented with 13 figures; and appendices include (1) a discussion of the selection process that Maine should follow to improve the probability that the system(s) will meet library needs, and (2) a listing of library users of small computers in Maine. (KM)

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THE EPSTEIN REPORT

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Sharing the Future

Statewide Automation for Maine Libraries

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Maine State Library

1986

The Report and its Background

In early 1984, the Maine Library Commission and the Maine State Library formed an Ad-Hoc Statewide Automation Committee for the purpose of planning the future of library automation in Maine. Seeking nationally-recognized expertise, the State Library, with the advice of the Committee, contracted with Susan Baerg Epstein in late August, 1984, to deliver several products and services, including meetings with librarians throughout Maine, and a final Report on a suggested direction for Maine libraries.

When the Report came, it was a year and a month overdue; this is it. The delay was a serious one, for legislative action in Maine occurs on a biennial cycle. Nevertheless, the Committee continued its work by taking the Report, analyzing it, and considering it against a rapidly changing automation environment. The State Library assigned its Northeastern District Consultant, Karl Beiser, to the task of working with the Committee and hammering out a legislative package for the 1987 legislative session. As I write this, that package is taking coherent shape.

The Epstein Report describes an emerging network among Maine libraries that may, in fact, bear only partial resemblance to that which actually evolves. But such a departure has always been assumed by all concerned. Technology does not allow any of us to run in place. What this Report did do was to bring Maine librarians to a common understanding of current library networking and how it might apply to Maine. We are going forward from there, as we always knew we must.

J. Gary Nichols
State Librarian

Augusta, Maine
August, 1986

SHARING THE FUTURE:
STATEWIDE AUTOMATION FOR MAINE LIBRARIES

A REPORT

SUBMITTED TO THE MAINE STATE LIBRARY

FEBRUARY 1986

SUSAN BAERG EPSTEIN
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To the librarians of Maine,

with deep appreciation and thanks

for their knowledge, enthusiasm,

hospitality, and patience.

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EXECUTIVE SUMMARY

Maine has a rich tradition of library service, with heavily-used collections and a large number of libraries of all types. There are 221 public libraries in the state. However, 93 of these are open no more than 10 hours a week, with 139 open no more than 20 hours a week. This means that well over half of the public libraries in the state are open less than 20 hours a week. These small libraries are isolated and have a small number of staff members. They are providing good service under the circumstances, but the libraries are poor, with low budgets and low per capita state support. Only 79% of the population of Maine pays taxes to directly support a library. Thus, cooperative efforts which are not funded with state monies have a poor chance of success.

Although the state is poor in library financial resources, it is rich in the volume of library materials available and the use made of these materials. Statewide, there are 4.67 books available per capita. These materials are not evenly distributed across the state. Thus, many of the small libraries do not have collections large enough to serve the needs of their patrons. The large number of libraries which are small, lightly staffed, and operating on low budget means that there is an extreme need inside the state to share resources to the greatest extent possible.

Current Cooperative Efforts

There is a strong history of a high level of interlibrary cooperation in the state of Main. These cooperative efforts are based in Area Reference and Resource Centers (ARRCs) which serve the northeastern, central, and southern sections of the state. Funding for the ARRCs is provided by the state (97%), with 3% from Library Services and Construction Act funds. There are several areas in which these Maine ARRCs are significantly different from similar cooperative efforts which are established in other states. The ARRCs involve every library of every type. This strong emphasis on multi-type cooperation is rare in statewide library efforts. The high level of multi-type cooperation may have occurred in response to the isolation and large number of small libraries in the state. Also unique is the strong involvement of the seven campuses of the University of Maine and of private colleges, particularly Bates, Bowdoin, and Colby, in serving Maine citizens who are not directly affiliated with the academic institutions. This involvement and cooperation is both impressive and rare.

The ARRCs, located at the Bangor Public Library, the Maine State Library, and the Portland Public Library, have developed into a highly centralized system. This centralization works very well when the ARRC libraries have the desired materials, but less well when the materials must be obtained elsewhere.

Most major Maine libraries are using OCLC (a national bibliographic and cataloging service located in Ohio), reflecting over a decade of hard work and vision toward what must have often seemed a remote goal of automated library linkage in Maine, yet the ARRCs are not able to access materials in many other Maine libraries because there is no easily available knowledge about the materials held in these collections. The libraries use OCLC through the Maine Card Service which provides catalog cards for individual libraries, but no location information on OCLC. There is no other machine-readable information regarding what is held in most Maine libraries. Yet, a 1984 informal study by a group of southern Maine libraries in the Confederacy of Southern Maine Libraries United in Cooperative Effort indicated that up to 40% of the materials requested could be located with the local group of libraries, and would not have to be sent to a centralized resource sharing source.

Even for libraries with individual holdings information on OCLC, full coverage of all materials held is rare, with only recent materials entered on OCLC. The problem of using OCLC as a comprehensive resource sharing tool are compounded because OCLC cannot indicate the current status of the material. In 1983-84 the Maine State Library could not fill 50% of the interlibrary loan requests received from OCLC. Of these, 35% were designated as library use only, 42% were not on the shelves at the time of the request, and 23% were for materials no longer owned. OCLC is an excellent source for difficult interlibrary loan requests, but its operation reflects the fact that it is primarily a cataloging utility and will never be able to display local call numbers and status information for materials.

It is important that any system developed to serve interlibrary loan and resources sharing needs deal with the reality that interlibrary loan is not the main focus of local library activity. Thus, any system developed for interlibrary loan and resource sharing must be developed primarily for other purposes, with interlibrary loan as an adjunct to that development. If a mechanism can be developed which ties a system beneficial for local library internal operations to the more altruistic and very necessary resource sharing, the resultant system will have a greater chance of success.

Developing Systems for the Future

Any system developed by the State of Maine for resource sharing must provide for at least four levels of participation, with easy migration paths from one level to another. These four levels include:

1. Full participation in all automated activities, with all local holdings included in the central database. The local library at this level can make full use of any implemented modules, including public access catalog, circulation, serials control, and acquisitions. These modules are used for internal functions in the library, with the automated system an integral part of daily operations.

2. Partial participation, with the local library's holdings on the central database, but the library using the database for resource sharing and electronic mail only. Libraries at this level do not use the automated system for internal operations, but are full participating resource sharing users.

3. Dial access participation. These libraries do not have full holdings on the database, although they may have holdings which reflect materials cataloged through the Maine Card Service. These libraries will have dial-up access to the database from local terminals, including microcomputers, for resource sharing and electronic mail.

4. Offline participants. These libraries will not have holdings on the central database, except for those materials cataloged through the Maine Card Service, and will have no direct access to the database itself. The ARRCs will continue to provide interlibrary loan services, as they do today.

One goal of any new automated system for the State of Maine must be the continuation of service at the current level for any library which cannot move operations onto the new system. In order to serve the entire state it is important that service for one type of library not be sacrificed for the service for other types of libraries which might be able to participate in one of the first three levels of the statewide plan. Each library would choose its level of participation, based on the availability of local resources and the library's needs. Virtually any library which wishes to be a part of the new automated system should participate, including public libraries of all sizes, the University of Maine, private post-secondary institutions, school libraries, special libraries of all types, and the Maine State Library.

A Plan for Statewide Automation

The system envisioned for Maine involves five separate, but linked, automated systems located throughout the state. This approach is somewhat revolutionary, or evolutionary, given the state of the art of library automation today. However, it will be possible in the near future to routinely link systems from the same vendor electronically so that movement from searching one system to searching another is transparent to the user. This capability is available from some vendors today. There are experimental projects which link one vendor's system to another vendor's system. These linkages do not require the users of one system to learn the search language and strategy of the other system in order to discover what materials are held on the other system. Within two or three years this linkage of unlike, or foreign, systems will be more common, although still in a developmental status. Strong efforts are currently under way to begin the process of developing national standards for this linkage. Meanwhile, efforts will continue to pragmatically develop the linkages. Much of the work being done to promote these linkages has been undertaken by state libraries across the nation.

These five linking systems, or nodes, would be developed across the state. One node would serve the University of Maine as a statewide academic system, building upon the work which has already been done to develop library automation within the University. A second node would serve the three private colleges, Bates, Bowdoin, and Colby, which have similar needs and which have already developed a heavy commitment to cooperation. The other three nodes would be built upon the current ARRCs, with one in Portland, one at the State Library, and one in Bangor.

These five nodes reflect current borrowing patterns and telecommunications costs. However, given the vast geographic area of Maine, it is likely that some libraries may migrate from one node to another as the statewide system matures. A telecommunications network would connect each full and partial participating library to its particular node. The five nodes would be connected in a star network which would provide a redundant pattern of telecommunications.

The linkages would make it possible to automatically switch from one node to another in a pre-defined pattern, searching for materials to fill patrons' needs. The order in which nodes would be searched would be governed not by hardware or telecommunications, but by the programming designed to serve the needs of Maine libraries.

It is impossible to determine at the beginning of system development which libraries might actively participate in the system, and at what level. It is, thus, very difficult to specify and obtain costs for such a system. The cost for the three geographic, or ARRC, nodes has been estimated at approximately $1,250,000 to provide the four levels of service. A system to serve the University of Maine would cost approximately $1,000,000.

One vendor estimated costs for three geographic nodes. A southern node with 37 terminals used for circulation control and staff searching of the database would cost $525,000. The 37 terminals in this configuration could be located in 37 libraries or in any combination up to 37 terminals in one library. The central node of 44 terminals would cost $565,000, while a northeastern node with 9 terminals would cost $150,000. Telecommunications costs would be dependent upon which libraries would use the node as full participants and those which use the node as partial participants. The costs of these systems include enough storage to hold the databases necessary to serve the potential libraries in each node, based upon an approximation of the typical overlap of one collection to another. The addition of more terminals to the system would raise the cost of the system considerably.

One vendor offers a pricing concept which recognizes the problems related to acquiring an automated system for which the degree of participation is difficult to determine in advance. Different libraries, even within the first level, may choose to automate a wide range of functions. These functions will change depending upon the available funding and libraries will move from one level to another over time. Some libraries may be reluctant to commit resources until they determine how well the system operates for individual libraries on a statewide level. The pricing concept, called support unit pricing, recognizes these difficulties when trying to specify a system with the possibility of dynamic growth. The vendor charges per terminal attached to the system, and agrees to provide enough central site equipment required to handle the needs of those terminals. The charge for each terminal is approximately $10,000.

Despite the uncertainties involved in determining future needs, it is important that a starting place be determined. Resources may not be available to develop the entire statewide automated system at one time. It thus becomes important to determine a method which will permit beginning at an affordable level and grow as the success of the system is demonstrated and as more libraries are able to participate. However, even if the money were available, it would not be possible to begin the entire system immediately since few libraries have been able to convert information about materials held into the machine-readable form necessary for an automated system.

The greatest statewide source of machine-readable bibliographic records is OCLC. Many of these records, however, are not usable for resource sharing purposes since they were created by the Maine Card Service. The records, when searched online at an OCLC terminal, indicate that the titles were cataloged by the Maine Card Service, but not which specific libraries hold the title.

An interim move towards the future development of a statewide automated system would provide a method for using the available bibliographic records more effectively, while also creating more machine-readable records reflecting materials held in Maine. Mississippi libraries have been using the services of Library System and Services, Inc. of Rockville, Maryland to provide these functions, as well as to serve as a switching point for Mississippi interlibrary loan requests. While there are some questions regarding the OCLC copyright and contributions to the OCLC "national database" if another service is used, a cost-effective method for Maine to move into the future needs to be found. A program similar to that developed for Mississippi would allow Maine to expand its current excellent resource sharing program, to allow more Maine libraries to be interlibrary loan lenders and reduce reliance on out-of-state library collections, and to build toward a full statewide automated system to serve the needs of all types of Maine libraries and, most importantly, the citizens of Maine.

The Near Future: Step-By-Step

Working closely with the *Ad Hoc* Statewide Automation Committee:

The First Step: A Project Director should be employed by the Maine State Library to advance the initial stages of the project. The scope of the undertaking and its resulting impact on Maine library service demand the focused attention of a library automation planner at a senior level — in the present state job structure, the equivalent of a Librarian IV. The Project Director should serve as a facilitator during the formation and initial meetings of the expanded automation committees, including those in governance and participation and on bibliographic standards and provide a clearinghouse for all information regarding progress towards statewide automation.

The Second Step: Since it may be many years before Maine has the resources to implement the full five node system, it is important that the progress made to date be utilized to the greatest possible extent. The first task for the Project Director should be to implement a system to expand the use of the current OCLC cataloging (by a method such as that used in Mississippi, or

Wisconsin) and to develop a methodology (based on adding holdings to existing bibliographic records and using Bibliofile, LSSI, or MITINET to add new titles to the Maine database) for increasing the scope of the machine-readable records available.

The Third Step: Simultaneously, the Project Director should design a detailed Request for Proposals (RFP) for the five-node installation described above, with the design specifying the probability of a gradual building towards the final network as money becomes available and emphasizing the need for linkages between the nodes. There will almost certainly be a node-by-node growth of the final network, with priorities and impacts carefully mapped beforehand. It is likely that new automation projects will be implemented by some Maine libraries during the planning period for statewide automation. Thus, standards should be developed for communications between acquired automated systems. These standards should be based on the work being done by the Automation Vendors Advisory Committee (AVAC) to develop interface standards expanded from those of the Linked Systems Project (LSP).

The Fourth Step: With a vendor or vendors provisionally selected based on RFP responses, the Project Director will finalize legislative requests for network staff and resources.

The Future

This plan is based upon today's knowledge and today's available technology. The technology available and affordable will change dramatically over the next ten years, as will the libraries of Maine. As each new program is developed, opportunities will occur to develop more. Funding patterns will change. Some things will become easier, some more difficult. This plan was developed for today. It is not meant to be permanent and unchanging. Part of the implementation of this plan must be its re-evaluation in light of a continually changing world.

LIBRARIES IN MAINE

Maine has a rich tradition of library service, with heavily-used collections and a large number of libraries of all types. The state is poor in library financial resources, with the nation's second lowest per capita income, but it is rich in the volume of library materials available and the use made of these materials. Maine has 4.67 books available per capita, the country's highest rate. This large number of books is used heavily, with 6.26 annual circulations per capita.

Public Libraries

There are 221 public libraries in the state. Of these, 139 are open no more than 20 hours a week, with 93 open 10 hours or less and 46 open only 5 hours or less a week. (Figure 1)

FIGURE 1

PUBLIC LIBRARIES IN MAINE - OPEN HOURS

HOURS OPEN PER WEEK	NUMBER OF LIBRARIES
1-5	46
6-10	47
11-15	25
16-20	21
21-25	25
26-30	13
31-35	13
36-40	16
Over 40	36

Over half of the public libraries are open 20 hours or less a week and also have smaller collections and circulation activity. (Figure 2, page 10)

Many of these libraries are isolated and have a small number of staff members. They are primarily poor, although scattered libraries have good per capita support. With a few notable exceptions, libraries in larger communities also have the largest collections and the largest circulations. (Figure 3, page 11)

FIGURE 2

PUBLIC LIBRARIES IN MAINE - CHARACTERISTICS
(1982-83 STATISTICS)

GROUP	POPULATION SERVED	NO. OF LIBRARIES	GROUP TOTAL COLLECTION SIZE	AVG LIBRARY COLLECTION SIZE	GROUP TOTAL ANNUAL CIRCULATION	AVG LIBRARY ANNUAL CIRCULATION
I	Under 500	5	39,182	7,836	25,460	5,092
II	500-999	32	239,694	7,490	134,598	4,206
III	1000-2499	72	756,226	10,503	666,580	9,258
IV	2500-4999	52	695,320	13,372	913,473	17,567
V	5000-9999	39	852,248	21,853	1,434,806	36,790
VI	10,000-24,999	18	813,157	45,175	1,526,079	84,782
VII	25,000-74,999	3	903,825	301,275	1,098,930	366,310
TOTAL	889,989*	221	4,299,652	19,455	5,799,926	26,244

*TOTAL STATE POPULATION = 1,124,660

FIGURE 3

PUBLIC LIBRARIES WITH COLLECTIONS AND/OR ANNUAL CIRCULATION OVER 50,000
(1982/83 STATISTICS)

GROUP	LIBRARY	POPULATION	COLLECTION	CIRCULATION
III	BLUE HILL	1,644	39,912	95,434
IV	CAMDEN	4,584	22,768	63,894
V	BELFAST	6,243	31,700	76,713
	BREWER	9,017	35,464	68,266
	FALMOUTH	6,853	27,768	60,166
	FREEPORT	5,863	24,830	60,708
	GARDINER	6,485	33,301	94,319
	HOULTON	6,766	33,985	75,091
	KENNEBUNK	6,621	23,961	53,479
	MILLINOCKET	7,567	39,640	66,082
	ROCKLAND	7,919	33,271	68,317
	SKOWHEGAN	8,098	26,622	51,770
	YARMOUTH	6,585	18,170	62,589
VI	AUBURN	23,138	86,499	133,665
	AUGUSTA	21,819	56,494	137,408
	BATH	10,246	36,434	94,057
	BIDDEFORD	10,246	60,957	77,283
	BRUNSWICK	17,366	46,931	139,334
	GORHAM (BAXTER)	10,101	20,796	59,501
	ORONO	10,578	41,937	53,282
	PRESQUE ISLE	11,172	48,799	84,699
	SACO	12,921	56,000	26,984
	SANFORD (GOODALL)	)	62,888	154,205
	SANFORD (SPRINGVALE)	)18,020	30,699	62,358
	SOUTH PORTLAND	22,712	75,743	158,351
	WATERVILLE	17,779	79,680	129,235
	WINDHAM	11,282	22,761	83,237
VII	BANGOR	31,643	472,840	465,424
	LEWISTON	40,481	149,626	192,997
	PORTLAND	61,572	281,359	440,509

Excellent service is provided by Maine's public libraries, as evidenced by the high use and collection size figures. But library materials are not evenly distributed across the state; many of the small libraries do not have collections large enough to serve the needs of their patrons. The large number of libraries which are small, lightly staffed, and operating on low budgets means that there is an extreme need within the state to share library resources to the greatest extent possible.

Not everyone in the state pays taxes to support a public library; only 79% of the population (889,989 of 1,124,060) pay library taxes. This has a profound impact on the operation of cooperative library efforts in the state. Extensive cooperative programs which are not funded with state monies will have a poor chance of success.

Academic Libraries

The University of Maine library system consists of eight libraries located on seven campuses, plus satellite campuses and off-campus centers. Libraries are located throughout the state, in Orono, Portland, Augusta, Farmington, Fort Kent, Machias, and Presque Isle. (Figure 4, page 13) These are considered equal campuses. With increasing financial strain they must also share resources. In order to assist in this sharing and to make the most effective use of resources, the University of Maine libraries have been planning for automation. An online automated system has been designed to handle an online public access catalog, circulation control, reserve book room activities, interlibrary and inter-campus loan, serials control, acquisitions, and access to reference databases. The libraries anticipate heavy use of the online system from users dialing into the system from home and office terminals. The system proposed is estimated to have an initial cost for the central processing equipment, 200 terminals, telecommunications equipment, and software of $1,236,000. The leadership role of the library of the University of Maine at Orono in opening the university collections to all residents of the state is exemplary and also very unusual.

FIGURE 4

UNIVERSITY OF MAINE LIBRARIES (1984)

CAMPUS	TITLES*	VOLUMES	USERS	CIRCULATION	MACHINE-READABLE TITLES
ORONO	380,000	588,000**	15,850	200,000	110,000
SO. MAINE	264,000	338,000	9,960	91,000	220,000
PORTLAND (LAW)	40,000	186,000	400	17,000	0
AUGUSTA	33,800	37,200	3,580	6,000	6,000
FARMINGTON	104,600	94,700***	2,355	48,600	30,000
FORT KENT	39,650	44,000	742	6,000	0
MACHIAS	57,600	57,700	1,525	17,400	0
PRESQUE ISLE	57,500	76,500	1,360	14,700	10,750
TOTALS	977,150	1,422,100	35,731	400,700	376,750

* No estimate of title overlap
** Plus 400,000 Micro & 946,000 Documents
*** Plus 14,150 Micro & 31,200 AV & Documents

There are a number of independent non-tax-supported institutions of higher learning in the state. Colby College, Bates College, and Bowdoin College all have good libraries designed to serve the needs of their institutions. They have been extremely generous in sharing materials not available elsewhere with other libraries in the state. This, again, is exemplary and also rare. The willingness of these college libraries to share resources must be planned in such a way that they are only asked for materials unavailable elsewhere, and are not burdened with requests which could be filled by a public library or the University of Maine.

In addition to Colby, Bates, and Bowdoin, there are a number of smaller colleges in Maine with valuable, unique collections which also participate in statewide resource sharing activities. In most cases these libraries are very willing to share materials. However, because they are smaller and may not be able to justify the use of a national cataloging utility, information about their holdings is not available outside the campus. Without information on holdings available to other libraries, those smaller academic libraries are infrequently asked for materials.

School Libraries

School libraries in Maine have played a very active role in cooperative activities across the state. To an extent greater than that seen in most other states, they are aware of the need to go beyond their own collections to provide materials for their students. To some degree this is a reflection of the distribution and location of Maine's library resources. Many school libraries are located in areas with small public libraries, some in areas with no public library service. The school library is then the best (or only) source for materials of all types for the student.

Special Libraries

Most special libraries in the state are very small, but many of them are very sophisticated in their use of new technology. These libraries provide service in depth to their clientele in corporations, health science, or research institutes. This group of libraries has a strong program of cooperation now, both within the group and with libraries of other types, and should be used as part of the support group for any future automation which occurs in Maine. They have highly specialized resources which currently are not shared heavily with other libraries in the state due to the lack of information regarding the location of these materials. Their serial holdings are available and shared, but few monographic materials. These libraries are, in many cases, involved in nationwide resource-sharing networks of a specialized nature.

Changing Patterns of Service

Although there are several pockets of wealth in the state, Maine's economy has been heavily dependent upon lumber, fishing, and natural resources, cyclic industries which are currently in decline. Emerging industries based on new technologies are beginning to appear, but most of these are very small, and in the near term are likely to require more resources from libraries than they are able to contribute in tax dollars. Many public libraries across the state are heavily dependent upon endowment funds to provide operating expenses.

There are several nationwide population trends which are of particular importance to Maine libraries. These include the increase in the number of elderly in America and the increase in the number of citizens living in rural areas.

Demographic changes in the composition of the population in rural areas is having a profound impact on the demands for library service nationwide. This is primarily the result of two phenomena, the increase in elderly Americans living in rural areas as a percentage of the rural population and the movement of people away from urban and suburban areas into rural areas. Many of the people moving into the rural areas wish to leave behind the more difficult aspects of urban life, but wish to carry with them the aspects of urban areas which made life pleasant there. Discussions with Maine librarians produced evidence of the same phenomena which are occurring in other previously isolated areas of the country. People are moving into the area and bringing with them a demand for sophisticated, extensive library service with a wide range of information sources. These new residents place a tremendous strain on the resources of small, poor libraries since these residents are accustomed to using larger libraries which offer more services. The needs of this segment of the population will place an increasing burden upon the current resource sharing facilities in the state.

This segment of the population will require materials for education, information, and recreation. They may be unwilling to travel to larger, more centralized locations to obtain library service, at the same time as the increasingly aging population finds it more difficult to leave the immediate neighborhood. It is now possible to merge improved material delivery with electronic information to be transmitted directly to the home. These developments have strong implications for the types of service which can be provided by Maine libraries.

However, as long as Maine is a library resource-poor state, sharing among libraries is one of the most effective responses to the emerging information society.

CURRENT COOPERATIVE ACTIVITIES

There is a strong history of a high level of interlibrary cooperation among the libraries in Maine. Unique in this history of cooperation is the emphasis on multi-type library involvement. Some states, such as Illinois and New Jersey, which have strong libraries, are just now beginning to develop resource sharing efforts which involve public, academic, school, and special libraries, something that occurred over 10 years ago in Maine. This high level of multi-type cooperation may have occurred in response to the small size and isolation of a large number of libraries in the state.

Also unique is the strong involvement of the seven campuses of the University of Maine and of private colleges, particularly Bates, Bowdoin, and Colby, in serving Maine citizens who are not directly affiliated with the academic institutions. This involvement and cooperation is both impressive and rare.

Area Reference and Resource Centers (ARRCs)

These cooperative efforts are based in three districts which are divisions of the Maine Regional Library System under the Maine State Library. They are a voluntary network of public, school, academic, and special libraries, as established under Public Law 626.

Service is provided through Area Reference and Resource Centers (ARRC) which serve the northeastern, central, and southern sections of the state. Funding for the ARRCs is provided by the state (97%) with 3% from Library Services and Construction Act funds. The ARRCs, located at the Bangor Public Library, the Maine State Library, and the Portland Public Library, have developed into a highly centralized system. This centralization works very well when the ARRC libraries have the desired materials.

The Bangor Public Library has the largest public library collection in Maine. The library has used OCLC for cataloging for several years, but relies primarily upon its card catalog for sources of information regarding its holdings.

The Maine State Library relies primarily upon its non-fiction collection to fill requests, using the Lewiston Public Library to augment its fiction resources.

The Portland Public Library serves the most populous district in the state. The library has converted over two-thirds of its collection to machine-readable form. Use of its automated circulation control system enables the library to determine not only whether or not the library owns a title, but also its availability.

The ARRCs are subsidized by the state for providing reference, interlibrary loan, and direct loan services. They use incoming and outgoing WATS service for communication with district libraries. The three ARRCs have different strengths and weaknesses, with procedures which are not standardized among the three. Libraries must use the ARRC which serves their district, even if they feel that another ARRC may be able to better serve them. The standard procedure is for a library to send a request to its designated ARRC which may then need to refer the request to another Maine library, such as the University of Maine. Sometimes, however, special libraries with a need for a technical title in a short period of time will go directly to the University of Maine.

Resource sharing must rely heavily upon the resources of OCLC when ARRC libraries do not have the needed materials. A union catalog of some of the holdings of the larger libraries in the state is available on OCLC as a by-product of local library cataloging on that bibliographic utility. This information is available only to libraries which use OCLC and have OCLC terminals. Ninety public libraries currently receive cataloging through the Maine Card Service from the Maine State Library. The Card Service uses OCLC for this cataloging, but, because it acts as a processing center, the information regarding which of the ninety libraries received cataloging for a title is not available online via an OCLC terminal. The individual library holdings will only be available when the OCLC archival tapes are processed on another computer.

There is no other machine-readable information regarding what is held in most Maine libraries. When an ARRC cannot locate a Maine holding on OCLC, it will request the title from an out-of-state library. This has resulted in Maine being the highest public library user of the OCLC interlibrary loan service in the NELINET service area (New England). (Figure 5) (Figure 6, page 20)

FIGURE 5

ARRC ILL STATISTICS

REPORTING YEAR 1984

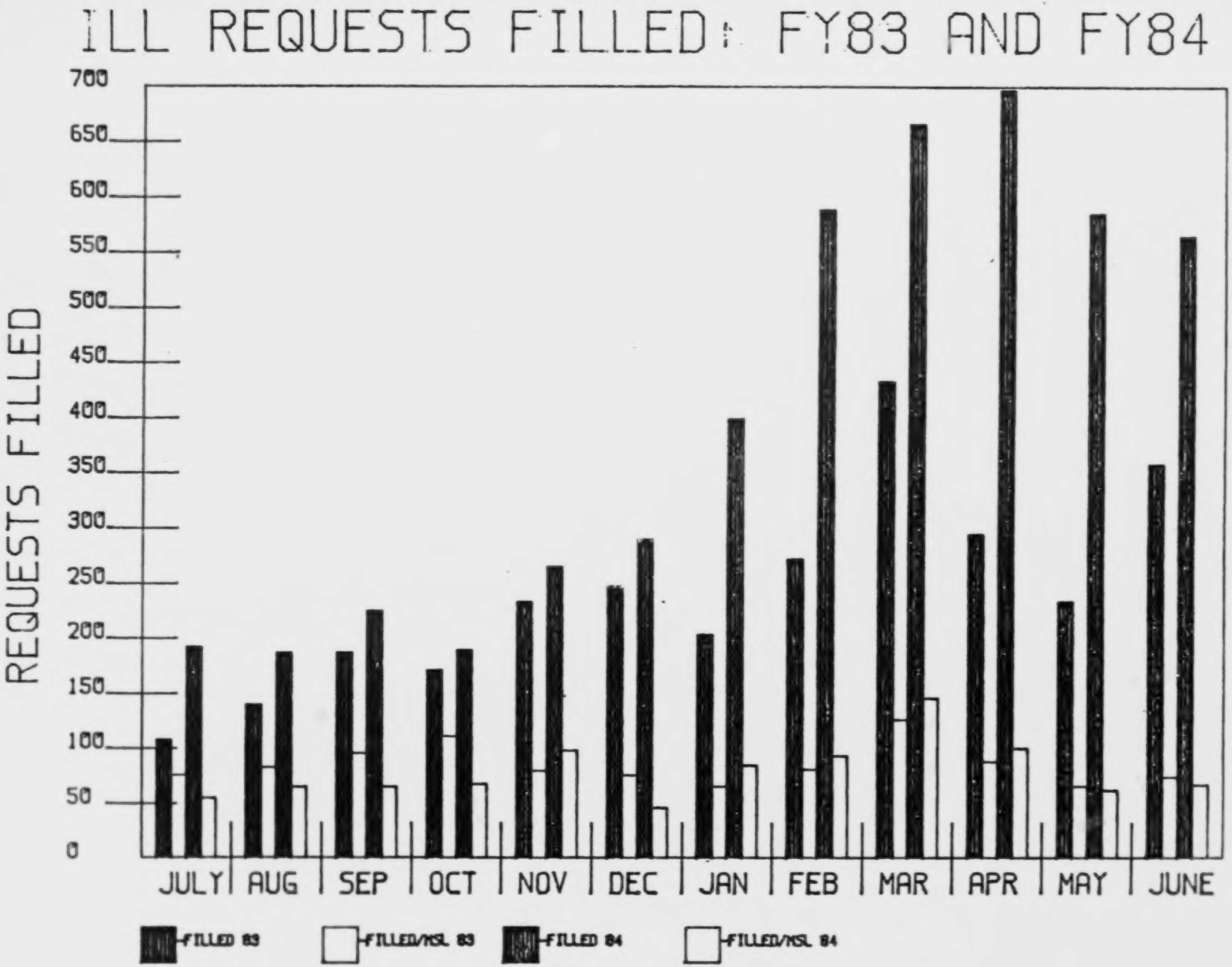
	LOANS	BORROWS	OCLC*
BANGOR	19,451	1,840	3,000
PORTLAND	7,384	4,424	4,021

****

* OCLC TRANSACTIONS	IN STATE	OUT OF STATE
BANGOR	1,800	1,200
PORTLAND	2,413	1,608

The ARRCs are not able to access the collections of Maine's medium-sized libraries since there is no currently available distributed knowledge about what is available to those collections. Yet, a recent informal study by the Confederacy of Southern Maine Libraries United in Cooperative Effort (COSMLUICE) indicated that up to 40% of the interlibrary loan materials desired could be located within this local group of libraries and would not have to be sent to a centralized ARRC. Until they began an experimental program to search card catalogs of confederation libraries, 40% of their requests were filled by the Portland Public Library and 60% were filled out-of-state. (Figure 7, page 21)

FIGURE 6



ILL requests for MSL filled by other libraries ▰
ILL requests from other libraries filled by us ▱

FIGURE 7

INTERLIBRARY LOAN ARRC ILL COUNT

1983

	RECEIVED	SENT	REFERRED	% FILLED
Bangor	22,836	16,300	3,36071	71
Portland	13,568	6,440	3,848	47
State Library	16,280	10,448	3,088	64
TOTAL	52,684	33,188	10,296*	63

* 19.5% referred

Although the shared resource interlibrary loan service has greatly improved library service for the citizens of Maine, it has some acknowledged problems.

1. Limitations on access to information about all materials held in Maine. Among the greatest shortcomings is information regarding materials in medium-sized public libraries. The combined acquisitions budgets of these libraries may approach those of the three ARRCs. Medium-size public libraries are not using interlibrary loan at the same per capita basis as small and large public libraries. This is likely to improve with access to more of these collections.

   There are a number of specialized collections, such as those in the vocational-technical institutes and other post-secondary institutions which currently cannot be shared with other libraries in the state.

In many cases staffing has been cut and there is no outside access to information about the collection. Libraries wishing to obtain materials from these collections usually surmise that an individual library might have the needed materials because of its collecting speciality and send off a "blind request". Faced with this uncertainty, the requesting library is more likely to send the request to the ARRC which can determine owning locations with more certainty, even if these locations are not in Maine.

Even for those libraries which have holdings statements on OCLC, it is unlikely that any titles other than the most recent will have been cataloged on OCLC. Portland Public Library and several University of Maine libraries (Figure 4, page 13) are doing retrospective conversion of their collections to put them into machine-readable form with records available on OCLC.

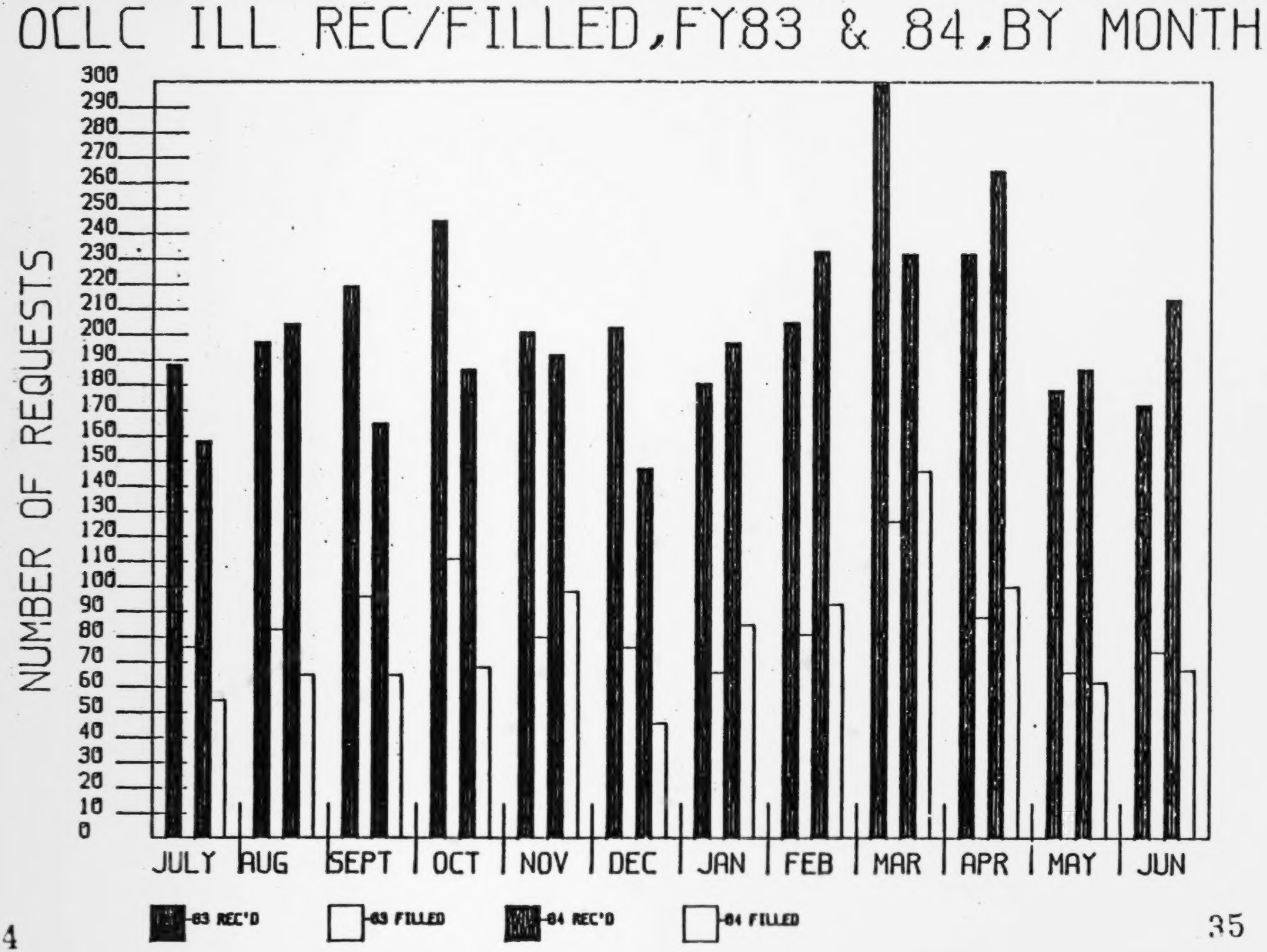
2. Procedural problems. The turnaround time is excellent for a system of this type, often three days or less in the northeastern district. However, this is often too slow for special libraries, such as those in hospitals, which would like to know quickly where materials are located so that they may obtain them directly.

   The process is not easily monitored by the requesting library. It is difficult to determine the current status of a request, making it hard to respond to patron questions regarding availability. There is no way to know what an ARRC is buying or the level of previous requests for the material. It is difficult to stop a request if it is no longer needed. Procedures are sometimes awkward since one ARRC cannot accept telephone requests. Fastest service is obtained from known author-title requests, but in smaller libraries, especially in schools, requests may be for subjects. These smaller libraries do not have the reference tools necessary to verify these requests and must send a more complicated request to the ARRC to determine appropriate titles and then to borrow them.

3. Availability status of the materials. The status of interlibrary loan materials requested from OCLC is unknown. In 1983-84 the Maine State Library could not fill 59% of the interlibrary loan requests it received from OCLC. (Figure 8, page 24) Of these, 35% were designated as materials for library use only, 42% were not on the shelves at the time of the request, and 23% were for materials no longer owned. The OCLC database does not contain the local call number for an item so it is impossible to determine whether it is circulating or reference. The nature of the processing center work performed by the Maine Card Service makes maintenance of holdings, reflecting discards and loss, impossible.

   OCLC does not display local call number information. Thus, it is impossible for a requesting library to determine if a title is for library use only or if it is available for circulation. If the requesting library had been able to see the Maine State Library call numbers for that 36% library-use-only material, perhaps it might have routed the request to another library or requested photocopies of a relevant section. OCLC is an excellent source for difficult, hard-to-locate interlibrary loan requests, but its operation reflects the reality that it is primarily a cataloging utility and will never be able to display local call numbers and status information about materials.

FIGURE 8



ILL requests received thru OCLC to be filled by MSL

CURRENT MAINE AUTOMATION ACTIVITIES

The primary automated activities in Maine libraries provide cataloging support, online reference database searching, and microcomputer applications.

Automated cataloging support in Maine relies on the national bibliographic utility, OCLC. Figure 9 lists the libraries which contract directly with OCLC, and Figure 10, (page 26), the libraries receiving OCLC cataloging through the Maine Card Service. While a larger number of titles are cataloged directly, the Maine Card Service cataloged over 35,000 titles in 1984.

FIGURE 9

OCLC USERS IN MAINE

PUBLIC LIBRARIES

Bangor Public Library

Portland Public Library

Curtis Memorial Library, Brunswick

ACADEMIC LIBRARIES

Ladd Library
Bates College

Bowdoin College Library

Miller Library
Colby College

College of the Atlantic

Husson College Library

Nutting Memorial Library
Maine Maritime Academy

Mantor Library
University of Maine at Farmington

Folger Library
University of Maine at Orono

University of Maine at Presque Isle Library

University of Southern Maine Library (Portland)

OTHER LIBRARIES

Maine State Library

FIGURE 10

MAINE CARD SERVICE LIBRARIES

TOWN	NAME:	HOLDING SYMBOL
Acton	Acton Public Library	MEQ5 , MEFA
Albion	Albion Pub.Lib.c/o Mrs. Flora Champlin	MEVS , MEVT
Alfred	Parsons Memorial Library	MEFD , MEFE
Andover	Andover Public Library	MEFB , MEFC
Ashland	Ashland Community Library	MEFG , MEFH
Auburn	Auburn Public Library	MEFI , MEFJ
Augusta	Lithgow Library	MEFK , MEFL
Bath	Patten Free Library	MEFM , MEFN
Belfast	Belfast Free Library	MEFO , MEFP
Bernard	Bass Harbor Memorial Library	MEWE , MEWF
Bethel	Bethel Library Association	MEWA , MEWB
Blue Hill	Blue Hill Public Library	MEFQ , MEFR
Bowdoinham	Bowdoinham Public Library	MEQ3 , MEQ4
Bradford	John B. Curtis Free Public Library	MEWO , MEWP
Brewer	Brewer Public Library	MEFS , MEFT
Bridgton	Bridgton Public Library	MEFU , MEFV
Brooksville	Brooksville Free Public Library	MEVA , MEVB
Bucksport	Buck Memorial Library	MEQ# , MEQ@
Calais	Calais Free Library	MEVW , MEVX
Canaan	Canaan Public Library	MEFY , MEFZ
Cape Elizabeth	Thomas Memorial Library	MEF1 , MEF2
Carmel	Simpson Memorial Library	MEV5 , MEV6
Casco	Casco Public Library	MEF3 , MEF4
Castine	Witherle Memorial Library	MEF5 , MEF6
Chebeague Island	Chebeague Island Library	MEVE , MEVF
Corinna	Stewart Free Library	MEF7 , MEF8
Cornish	Bonney Memorial Library	MEF9 , MEF+
Cranberry Isles	Great Cranberry Library	MEV7 , MEV8
Cumberland Center	Prince Memorial Library	MEF& , MEF$
Damariscotta	Skidompha Public Library	MEF* , MEF%
Deer Isle	Chase Emerson Memorial Library	MEF# , MEF@
Dexter	Abbott Memorial Library	MEIA , MEIB
Dover-Foxcroft	Thompson Free Library	MEIC , MEID
East Machias	Sturdivant Public Library	MEIE , MEIF
East Sebago	Spaulding Memorial Library	MEIG , MEIH
Eliot	William Fogg Library	MEII , MEIJ
Ellsworth	Ellsworth City Library	MEIK , MEIL
Falmouth	Falmouth Memorial Library	MEIM , MEIN
Farmington	Farmington Public Library	MEIO , MEIP
Fayette	Underwood Memorial Library	MEIQ , MEIR
Fort Fairfield	Fort Fairfield Public Library	MEIS , MEIT
Gardiner	Gardiner Public Library	MEIU , MEIV
Gorham	Baxter Memorial Library	MEIW , MEIX
Gorham	North Gorham Public Library	MEIY , MEIZ
Greenville	Shaw Public Library	MEQ+ , MEQ$
Guilford	Guilford Memorial Library	MEI1 , MEI2
Hallowell	Hubbard Free Library	MEQ* , MEQ%
Harrington	Harrington Lib. Assoc. c/o Bernadine Ray	MEVY , MEVZ
Harrison	Caswell Public Library	MEI3 , MEI4
Hollis Center	Hollis Center Library	MEI5 , MEI6
Houlton	Cary Library	MEI7 , MEI8
Jackman	Jackman Public Library	MEI9 , MEI+

FIGURE 10 (cont.)

MAINE CARD SERVICE LIBRARIES

TOWN	NAME:	HOLDING SYMBOL
Kennebunk	Kennebunk Free Library	MEI& , MEI$
Kittery	Rice Public Library	MEI* , MEI%
Lewiston	Lewiston Public Library	MEI# , MEI@
Lisbon	Lisbon Village Library	MEVQ , MEVR
Lisbon Falls	Lisbon Falls Community Library	MEV3 , MEV4
Lovell	Charlotte E. Hobbs Library	MEOA , MEOB
Machias	Porter Memorial Library	MEVK , MEVL
Madawaska	Madawaska Public Library	MEOC , MEOD
Mattawamkeag	Mattawamkeag Public Library	MEWC , MEWD
Millinocket	Millinocket Memorial Library	MEOE , MEOF
Monmouth	Cumston Public Library	MEVG , MEVH
Mount Vernon	Dr. Shaw Memorial Library	MEOG , MEOH
Naples	Naples Public Library	MEOI , MEOJ
New Gloucester	New Gloucester Public Library	MEOK , MEOL
New Harbor	Bristol Area Library	MEVU , MEVV
Newagen	Southport Memorial Library	MEOM , MEON
Newport	Newport Public Library	MEOO , MEOP
North Bridgton	North Bridgton Library	MEOQ , MEOR
North Jay	Jay-Niles Memorial Library	MEV% , MEV&
Norway	Norway Memorial Library	MEOS , MEOT
Old Town	Old Town Public Library	MEWM , MEWN
Orrington	Orrington Public Library	MEOU , MEOV
Phillips	Phillips Public Library	MEOW , MEOX
Phippsburg	Albert F. Totman Library	MEOY , MEOZ
Pittsfield	Pittsfield Public Library	MEO1 , MEO2
Poland	Alvan Bolster Ricker Memorial Library	MEO3 , MEO4
Presque Isle	Mark and Emily Turner Memorial Library	MEO5 , MEO6
Prospect Harbor	Dorcas Library	MEO7 , MEO8
Rangeley	Rangeley Public Library	MEWK , MEWL
Rockland	Rockland Public Library	MEO9 , MEO+
Saco	Dyer Library	MEVI , MEVJ
Sanford	Louis B. Goodall Memorial Library	MEO& , MEO$
Scarborough	Scarborough Public Library	MEVM , MEVN
Searsport	Carver Memorial Library	MEVC , MEVD
Sebago Lake	Richville Library	MEV# , MEV@
Shapleigh	Shapleigh Community Library	MEO* , MEO%
Solon	Coolidge Library	MEQ6 , MEQ7
South China	South China Public Library	MEO# , MEO@
South Portland	South Portland Public Library	MEQA , MEQB
Southwest Harbor	Southwest Harbor Public Library	MEQE , MEQF
Springvale	Springvale Public Library	MEV9 , MEV+
Steep Falls	Steep Falls Library	MEQG , MEQH
Tenants Harbor	Jackson Memorial Library	MEV1 , MEV2
Topsham	Topsham Public Library	MEQI , MEQJ
Turner	Turner Public Library	MEWG , MEWH
Van Buren	A. J. Morneault Memorial Library	MEQK , MEQL
Vinalhaven	Vinalhaven Public Library	MEV$, MEV*
Waterville	Waterville Public LIbrary	MEVO , MEVP
Wayne	Cary Memorial Library Association	MEQM , MEQN
Weld	Weld Public Library	MEQO , MEQP
Wells	Wells Public Library	MEQQ , MEQR
Westbrook	Warren Memorial Library	MEWI , MEWJ

FIGURE 10 (cont.)

MAINE CARD SERVICE LIBRARIES

TOWN	NAME:	HOLDING SYMBOL
Wilton	Wilton Free Public Library	MEQ8 , MEQ9
Windham	Windham Public Library	MEQC , MEQD
Winslow	Winslow Public Library	MEQS , MEQT
Winter Harbor	Winter Harbor Public Library	MEQU , MEQV
Winterport	Winterport Memorial Library	MEQW , MEQX
Winthrop	Charles M. Bailey Public Library	MEWQ , MEWR
Yarmouth	Merrill Memorial Library	MEQY , MEQZ
York	York Public Library	MEQ1 , MEQ2

The use of the Maine Card Service is currently limited to public libraries. A proposal has been made to extend this service to school libraries. (An example of the strong commitment to cooperative service in Maine is the support given to this proposal by librarians from other sectors of the library community.)

Online searching of reference databases is done by most of the larger libraries in Maine, as well as special libraries. There is a very active Maine On-Line Users Group which administers a reduced-rate group contract and provides an information exchange mechanism. Some specific search services available to all citizens of Maine are described in more detail in the section on Online Searching later in this report.

There is a heavy use of microcomputers in Maine libraries. Applications for internal library use range from word processing to catalog card production to circulation control. Many libraries also provide microcomputers for public use. Appendix B provides more detail on some of this use.

There are two turnkey automated circulation control systems in Maine libraries, a CLSI system at Portland Public Library and a Dynix system at South Portland Public Library. The CLSI system was acquired in 1979 and operates on a DEC-PDP 11/04. This system is serving the Portland Public Library well, but it is the oldest CLSI product and has restricted expansion capabilities beyond the functions currently used. Disk storage holds information about approximately 75% of the Portland collection and has a limited amount of space remaining. The library would like to expand the system, but does not currently have funding to do so. There is no requirement that the library necessarily continue using its current system if a viable alternative system is available.

The Future for Cooperation

An unparalleled opportunity exists in Maine to institute statewide library automation, building upon the long established history of cooperation. The constraints imposed by currently existing systems are few; it is possible to include all libraries in the planning process and to ensure compatibility of the systems used.

Good libraries lead to other good libraries. As technology increases, rather than solving all problems, the possibilities of providing service in more areas occurs. True cooperation may result in libraries of different types working together to provide service to their common users through automation. A school librarian trained and experienced in assisting students with classroom assignments could use online access to a larger public library collection to assist the student in selecting materials to be borrowed directly from the public library.

DEVELOPMENT OF A PLAN

The concept of a centralized database has been talked about in Maine for many years. The Southern Maine Library District Five Year Plan of Service 77-81 states, "A full union catalog could subsequently be produced [after cataloging] as a by-product of this service for all participating libraries which would shorten the search time for ILL and make locating materials easier." A resolution from the Governor's White House Conference on Libraries, April 19, 1979 includes "A union list of all materials in Regional System libraries should be funded and developed, should be accessible to all residents of the state, and should eventually become part of a national network."

The greatest need for such a union list is to locate monographic, or book, materials. Comparatively speaking, serials are not difficult to find, due to the Maine Union List of Serials, but monographs can be extremely difficult.

It is vital that any system developed to serve interlibrary loan and resource sharing needs deal with the reality that interlibrary loan is not the main focus of local library activity. Even in a state such as Maine, with its very high interlibrary loan level, the circulation ratio of materials already owned by a local library to those which are borrowed from other libraries is still very high. This simply recognizes the behavior of library patrons.

Many public library patrons prefer to browse physical collections or lists of titles, rather than sending for material which may not arrive for several days or weeks. In Maine the number of small collections increases the likelihood that a patron will request materials from another library. It has been suggested that scholars, however, use interlibrary loan heavily.

Several recent studies indicate that almost half of the citations in a scholarly article come from materials in the author's personal library, another quarter will come from material which is located in the scholar's university library (still leaving one quarter coming from outside). Library users have often chosen ease of availability rather than searching for the most exhaustive or accurate source. Conflicting evidence comes from recent information from the University of Illinois at Urbana-Champaign. This library is one of the largest research libraries in the country, but has developed a strong, intrastate automated system which provides users in Urbana-Champaign with information about materials held in academic institutions throughout the state. With information about other holdings readily available to library users and a good delivery system, interlibrary borrowing now accounts for over 10% of the University of Illinois at Urbana-Champaign circulation, a phenomenal percentage. It is important to note that the system, LCS, which provides this information to library users throughout the state contains not only information about the materials held, but also information about the circulation status of that material.

The interlibrary loan process across the country presently puts the burden of work on the lending library, which influences how the lending library feels about interlibrary loan. The work needs to be placed with the borrowing library, to the greatest extent possible. If the borrowing library can locate a title, know which library has the title currently available, and electronically transmit the request complete with call number, the borrowing library has greater control of the process and can deal with the patron confidently.

There is a flattening of the curve between net borrowers and net lenders when information is available about more collection holdings. Requests are directed to libraries with the material currently on the shelf and to libraries which provide the best, most responsive service.

It is important that any automated system developed for interlibrary loan resource sharing be developed primarily for other purposes, with interlibrary loan as an adjunct to that development. If this does not happen, the ongoing effort to maintain the automated interlibrary loan system will not be sustained. When budgets are tight and operations must be curtailed, those services which will be curtailed will be in the area of resource sharing, not in the area of giving direct service to the patrons who visit the library. Therefore, if the development of a mechanism which ties a system beneficial to local libraries for internal operations to the more altruistic and very necessary resource sharing, the resultant system will have a greater chance of success.

Resource Sharing in Other States

Virtually every state has established or is studying automated resource sharing systems. These systems vary widely, reflecting the needs of each state. The methods chosen are highly dependent upon the size of the state, its population, current automated activities within the state, the number and size of libraries, the previous history of cooperation, and the funding available. The states mentioned below are used as illustrations; the list is not intended to be comprehensive.

Many states have developed a statewide machine-readable database which is distributed on COM microfiche. These states include Wisconsin, Arkansas, Kansas, Nebraska, with Kentucky in the implementation stage. Maryland and California have previously had COM microfiche catalogs, but have recently switched to online access, with Maryland using AGILE-II from Autographics and California using OCLC. Utah is also using state-financed access to OCLC services. Mississippi is using an online system at Library Systems and Services with a monitored transmission of requests to reduce costs.

Several states have moved beyond statewide catalogs to statewide automated services which provide more functions. A recent Nebraska study recommends that the state should fund libraries otherwise unable to pay for catalog record conversion, that an automated subnetwork of four major public and academic libraries should link their databases, and that state colleges should all acquire the same automated system.

In Illinois local public library circulation systems have received partial state funding to enable small libraries to jointly automate. Libraries with annual circulations as low as 17,000 are finding it economical to join these large federated systems. There is also a huge statewide automated system to serve twenty five academic libraries in Illinois. These large systems have resulted in dramatic increases in interlibrary loan activity. Nevada has built a network of interconnected circulation systems which links the entire state and provides improved service to many isolated communities.

West Virginia has acquired VTLS systems which will be used by libraries throughout the state. This state decision has been possible due to state-provided funding. West Virginia, a poor state, currently has per capita library support among the highest in the country. The State Library is providing the leadership for this project.

New Hampshire more closely reflects a situation where there is a high commitment to resource sharing, but where there are already installed automated systems which have been or will be purchased over time through various funding sources. Although the State Library had taken a leadership role in acquiring machine-readable cataloging for public libraries throughout the state, financial resources were not sufficient to acquire a statewide system similar to that in West Virginia or Vermont. Strong cooperative efforts, however, between the public, school, and academic libraries may result in several automated systems, located throughout the state, shared by different types of libraries, and funded by different sources. The most important resource sharing decision made in New Hampshire is that no matter what vendor supplies a local system, no matter where it is located, no matter which libraries use it, and no matter how it was funded, the system must be able to communicate with every other system in the state.

A PLAN FOR MAINE

Maine can benefit from the experiences of other states, but the needs and opportunities for Maine are unique.

Levels of Implementation

Any system developed by the State of Maine for resource sharing must provide for at least four levels of participation, with easy migration paths from one level to another. These four levels include:

1. Full participation in all automated activities, with all local holdings included in the central database. The local library at this level can make full use of any implemented modules, including public access catalog, circulation, serials control, and acquisitions. These modules are used for internal functions in the library, with the automated system an integral part of daily operations. The cost to a library for this level of participation is likely to be in the range of an initial cost of $12,000 per terminal plus $5,00C per terminal annual operating expense, with this figure decreasing as the number of terminals on the system increases. Many terminals would be required by each library which uses the system at this level.

2. Partial participation, with the local library's holdings on the central database, but the library using the database for resource sharing and electronic mail only. Libraries at this level do not use the automated system for internal operations, but are full participating resource sharing users. Because the library participating at this level has its holdings on the central database the initial cost per terminal is the same as for full participation, but the annual terminal maintenance costs are reduced since dial-up communication with the database is used. Most libraries using the system at this level would have only one terminal.

3. Dial access participation. These libraries do not have full holdings on the database, although they may have holdings which reflect materials cataloged through the Maine Card Service. These libraries will have dial-up access to the database from local terminals, including microcomputers, for resource sharing and electronic mail. The cost of participation at this level reflects the cost of a microcomputer and telecommunications equipment. This equipment can be used for many other purposes in the library (see Appendix B) and costs $1,500 - $5,000 depending upon the sophistication and size of the microcomputer acquired and the peripheral equipment added. The cost per call is likely to be the same as that experienced with the use of the ARRC 800 numbers, but with a significant increase in the number of calls.

4. Offline participants. These libraries will not have holdings on the central database, except for those materials cataloged through the Maine Card Service, and will have no direct access to the database itself. The ARRCs will continue to provide interlibrary loan services, as they do today. The costs to provide this level of service would be the same as they are today.

One goal of any new automated system for the State of Maine must be the continuation of service at the current level for any library which cannot move operations onto the new system. In order to serve the entire state it is important that service for one type of library not be sacrificed for the service for other types of libraries which might be able to participate in one of the first three levels of the statewide plan. Each library would choose its level of participation, based on the availability of local resources and the library's needs. Virtually any library which wishes to be a part of the new automated system should participate, including public libraries of all sizes, the University of Maine, private post-secondary institutions, school libraries, special libraries of all types, and the Maine State Library.

Many small public libraries would like comprehensive automation, but are quite concerned about the expense and complexity of the operation. These libraries are particularly concerned about the need to adhere to national standards, since some of them may not even have a card catalog currently. There is a basic desire on the part of these libraries to provide these options to the public, but the reality of low funding must be faced. For these libraries the advent of catalog card service from the Maine State Library and the strong district program with ARRCs has provided a significant improvement in the types of library services offered to their users. It is unlikely that these libraries will be able to significantly contribute to the early development of statewide automation services in other than an advisory capacity. It is vital that these libraries lose no services during the transition to any new system and that the ARRC concept be retained while there are libraries which still need it.

The ARRC resource concept will remain although, over time, these ARRC libraries will have less involvement in intrastate lending for libraries using the first three levels of statewide automation. The ARRC libraries will continue to provide full service to libraries using the fourth level and out-of-state borrowing for all four levels.

A Plan for Statewide Automation

The plan envisioned for the State of Maine involves five separate but linked automated systems located throughout the state. One system, or node, will serve the University of Maine as a statewide academic system, building upon the work that has already been done to develop library automation within the University. A second node would serve the three private institutions, Bates, Bowdoin, and Colby, which have similar needs and which have already developed a heavy commitment for cooperation. The other three nodes would be built upon the current ARRC centers, with one in Portland, one at the State Library, and one at Bangor.

These five nodes reflect borrowing patterns and telecommunications costs. However, given the vast geographic area of Maine, it is likely that some libraries may migrate from one node to another as the statewide system matures. For instance, the University of Maine at Machias might originally have its holdings and activities on the University of Maine node, but later migrate to the node based at the Bangor Public Library due to telecommunications charges and borrowing patterns of its library users.

A telecommunications network would connect each full and partial participating library to is particular node. The five nodes would be connected in a star network which would produce a redundant pattern of telecommunications so that if one telecommunications link is not operational it will still be possible to communicate from one system to another.

A user would automatically switch from one node to another in a pre-defined pattern, searching for material to fill patrons' needs. For instance, from one of the three geographically based nodes it is likely that the first search would be to another geographically based node, and then to the third, and eventually to an academic node, usually that of the University of Maine. For the academic nodes it is likely that the first search would be to the other academic node. The order in which nodes would be searched would be governed not by hardware or telecommunications, but by the way the system was programmed to deal with remote searching. Thus, the systems would be adaptable and subject to change.

One of the reasons for developing a University of Maine node independently, despite its statewide geographic spread, has to do with the work which has already been done, both in planning for an integrated system and in the conversion of bibliographic records to machine-readable form. These libraries will be ready to move to automation much earlier than some of the other libraries involved in this statewide plan.

The use of five separate nodes means that the database of holdings of libraries in the State of Maine would be distributed in five separate databases. One database would not contain all the holdings in the state. There are a number of problems in creating and maintaining one monolithic database which would be used by all libraries in the State of Maine. One central database means that all changes to records must be done at a statewide level and copies of records transmitted to local nodes for circulation control purposes. The telecommunications costs of one central node are likely to be much too high for full participant users.

There are a number of advantages to sharing systems; the major ones are in the areas of shared costs and knowledge of the collection of neighboring libraries, including availability and status information. Particularly in the southern district, patrons can move to the books and it will not always be necessary to move books to patrons. There are, however, a number of problems associated with sharing a system. Most of these are related to the centralized or shared database. Libraries must accept the concept of one bibliographic record with multiple entry points and multiple library holdings. Most libraries are currently accepting cataloging from a bibliographic utility. It is one step more to accept cataloging done by neighboring libraries using these same source records. Individual copy records which are attached to bibliographic records can contain local call numbers, including prefixes and suffixes, individual item prices, and in some cases a local notes field. If laser disk technology develops as expected, it may be possible to create a laser disk-based statewide database at each node, containing information about all records except the most recent additions, changes, and deletions. Records found on the laser disk would not provide status information for the material.

Libraries will use the system at different levels at different times. There is no automatic determination of which libraries should use which level and in what order they could implement automation. It is probable, but not required, that the first libraries to use the system at the first and second levels will be the larger public libraries with collections over 50,000 titles, the University of Maine libraries, and the Maine State Library. The order in which libraries are implemented will depend heavily upon the availability and source of funding, as well as the commitment from the library.

This plan will take many years to implement fully, not because the technology will not be available before then, but because it will be difficult to fund and administer the plan. However, the plan should provide benefits to Maine libraries from its earliest stages.

The implementation of this plan will require the involvement of many Maine librarians serving on the current automation committee and on future policy, implementation, training, and bibliographic standards committees.

Linking Systems

This approach is somewhat revolutionary, or evolutionary, given the state of the art of library automation today. However, it will be possible in the near future to routinely link systems from the same vendor electronically so that movement from searching one system to searching another is transparent to the user. This capability is available from some vendors today. There are experimental projects which link one vendor's system to another vendor's system. These linkages do not require the users of one system to learn the search language and strategy of the other system in order to discover what materials are held on the other system. Within two or three years this linkage of unlike, or foreign, systems will be more common, although still in a developmental status. Strong efforts are currently under way to begin the process of developing national standards for this linkage. Meanwhile, efforts will continue to pragmatically develop the linkages. Much of the work being done to promote these linkages has been undertaken by state libraries across the nation.

Three states in particular have made a strong effort in this direction: Oklahoma, Illinois and Massachusetts. Oklahoma has taken the coordinating role of trying to develop standard specifications so that libraries throughout the state will be certain that the systems bought can be linked to each other. The State of Illinois has made the ability to link systems a high priority in the granting of state and federal funds to local library systems, and has called several meetings to discuss these issues with vendors and libraries. The strongest effort has been made by the State of Massachusetts which has actively encouraged work towards linkages, both by encouraging vendors of local systems to provide these linkages and by hiring a consultant to develop a canonical system which could be used by many systems owned by libraries throughout the state. This basically involves developing a standard interface protocol which would be used by existing vendor systems. The vendor's system would be required to translate its system language into the canonical language so that requests from that vendor's system can be transmitted to other systems. Similarly a vendor would be required to translate from canonical language into the local system language in order to accept requests for information.

State libraries have also funded demonstrations to link unlike systems. In California the Gateway Project in Orange County links, via a microcomputer, six libraries using three systems from two vendors. Massachusetts has linked two different systems using the canonical language mentioned above. The most ambitious, and expensive, project involves the IRVING libraries in Colorado which are developing a microcomputer "black box" system to actually translate requests from one vendor's structure to another vendor's structure.

Telecommunications

The telecommunications issues related to library automation in Maine are great. At the present time the cost of telecommunications is one of the major reasons for proposing five decentralized nodes. (Political realities are another major concern.) The costs of dedicated telephone lines to a central computer would be prohibitive.

Telecommunications options are limited in the short-term, restricted to dedicated or dial-up telephone lines. There is no in-state packet switching and few Value Added Network nodes.

The state government has conducted a telecommunications inventory of the state. The current state system uses private lines for dial-ups as the only option to dedicated telephone company lines. The current system is old, slow, expensive, and error prone. The governor has indicated a desire to have the telecommunications network upgraded within 5 to 8 years, with a strong investigation being made of a public microwave network. The University of Maine has a large microwave network which is not currently operating at capacity. Parts of this network might be utilized for a statewide library network. The State Police have an analog-voice system which is also not operating at capacity.

It is important that the needs of the libraries of Maine be included in any statewide planning for microwave, satellite, or other new telecommunication systems.

The uncertain status of today's telecommunications domain means that it is important that permanent decisions not be made regarding the telecommunications methodology used to link the statewide system until more is known about the viable organizations in a new unregulated telecommunications world.

Any statewide telecommunications network should be piggy-backed on a statewide network developed for a multitude of state purposes. Despite the importance of telecommunications to the success of a statewide Maine automated library network, the library community will not be able to afford the development of such sophisticated telecommunications device as microwave towers or satellites. In order to reduce costs it will be important to acquire new methods of telecommunications, but the capital costs of these new telecommunications transmissions technology must be shared by many state agencies.

Two different types of telecommunications linkages need to be considered. The telecommunications methodology which links one node to another is most amenable to the use of new telecommunications delivery systems such as microwave or satellite. Transmission from a given library to a node will be either via a dedicated telephone line or via an intermittent dial-up line. For the near term the use of telephone lines for dedicated users is the most viable alternative. Dial-up access to these nodes would be facilitated for partial users if 800 numbers were provided. Libraries participating at Level 1 need a permanent connection to the system because they are using it all the time. This connection must include an element of redundancy, due to the likelihood of weather disturbances.

As the Maine statewide automated library system and the statewide communications system both evolve, it will be important to re-assess the five node concept. There is nothing in the size of the Maine database, the transaction level, or the number of terminals which would prohibit the use of a single node, if telecommunications costs could be controlled.

Costs and Funding

It is impossible to determine at the beginning of system development which libraries might actively participate in the system, and at what level. It is, thus, very difficult to specify and obtain costs for such a system. The cost for the three geographic, or ARRC, nodes has been estimated at approximately $1,250,000 to provide the four levels of service. A system to serve the University of Maine would cost approximately $1,000,000.

One vendor estimated costs for three geographic nodes. A southern node with 37 terminals used for circulation control and staff searching of the database would cost $525,000. The 37 terminals in this configuration could be located in 37 libraries or in any combination up to 37 terminals in one library. The central node of 44 terminals would cost $565,000, while a northeastern node with 9 terminals would cost $150,000. Telecommunications costs would be dependent upon which libraries would use the node as full participants and those which use the node as partial participants. The costs of these systems include enough storage to hold the databases necessary to serve the potential libraries in each node, based upon an approximation of the typical overlap of one collection to another. The addition of more terminals to the system would raise the cost of the system considerably.

One vendor offers a pricing concept which recognizes the problems related to acquiring an automated system for which the degree of participation is difficult to determine in advance. Different libraries, even within the first level, may choose to automate a wide range of functions. These functions will change depending upon the available funding and libraries will move from one level to another over time. Some libraries may be reluctant to commit resources until they determine how well the system operates for individual libraries an on a statewide level. The pricing concept, called support unit pricing, recognizes these difficulties when trying to specify a system with the possibility of dynamic growth. The vendor charges per terminal attached to the system, and agrees to provide enough central site equipment required to handle the needs of those terminals. The charge for each terminal is approximately $10,000.

The costs for operating each node include site preparation, utilities, a node administrator, computer operators, and supplies. Costs can be reduced considerably by placing the nodes in existing data processing centers, sharply cutting the site preparation costs from the $25,000 - $75,000 range to under $10,000 for the required 300 - 450 square feet. The primary utility costs are for electricity and climate control; these costs are also reduced, but not as sharply, if a data processing site is shared. Each node will need an administrator to oversee operations, deal with all participating libraries, and to work with the administrators of the other nodes and and the statewide committees. As the node is being established, this will require a full time librarian with a strong interest in automation. As the node operation matures, this can become a one-quarter to one-half-time position. The costs of computer operators will be reduced dramatically if a data processing center is used. Automated library systems require comparatively little attention when they are operating (but considerably more when they malfunction, 2% of the time). If the library automation system is in its own site it will require the attention of a computer operator for every hour it is operational. This can range from two shifts six or seven days a week to three shifts seven days a week. However, many libraries share computer operators with other data processing operations, paying for only a percentage of the operator's time. The costs of supplies is comparatively low, usually under $1,000 per year.

The costs included here are approximate, but are adequate for budgeting purposes. Exact costs cannot be known until after a vendor is selected and a system procured. A formal Request for Proposal should be used to procure a system. Procedures for selecting a vendor and items to be included in a Request for Proposal are included as Appendix A of this report.

Funding will also be necessary for operating expenses. These include maintenance of the hardware and software, staff, supplies, replacement and upgrade of equipment, and telecommunications.

A major issue to be resolved is who pays for this resource sharing. Much of the growth in Maine is occurring in outlying communities where the tax support is low or nonexistent. A strong concern was expressed by many librarians throughout the state that their library's resources might be drained in a statewide system to serve other users and that these libraries would not have the compensation currently accorded to the three ARRCs for this resource sharing.

It is clear that there must be state funding assistance. Some costs must be gradually moved to those libraries that are using this system. For libraries which use this system only for resource sharing, funding is similar to interlibrary loan today. As libraries begin to use this system for their own internal operations, their own catalog, or their own circulation system, local funding becomes important. Serious questions regarding the use of limited state funds and priorities for libraries which are of value to the state as a whole will have to be addressed. For libraries which are willing to partially fund participation, is the state able to match these funds so that those libraries that are ready first, get the first money. The state will need to fund at least portions of the costs of database loading, the retrospective conversion, and the central computers. However, individual libraries will need to fund the things used in the library, such as terminals.

Any state grants-in-aid should be given for those projects which will provide the greatest benefit to the libraries of the state as a whole. The Maine Card Service is an excellent example of a program which benefits many libraries, but concentrates resources in one project where the incremental cost of adding one more library is comparatively small. The dollars provide more value when spent for the Maine Card Service than if the money were given directly to libraries to do their own cataloging on OCLC. Local grants-in-aid connected to statewide automation should be used to convert collections or portions of collections to which other libraries wish to gain access. The other state money should be used to implement the five node plan (with the costs used as outlined in the previous paragraph), to continue the ARRCs at a gradually reduced level as more interlibrary loan activity flows through the nodes, to provide for compensation for large net lenders (ILL or direct borrowing), and to expand the use of the current machine-readable bibliographic records while developing and implementing the five node plan.

Many grant funding sources, particularly the Kellogg and Pew Foundations, are interested in supporting strong cooperative efforts which involve automation. The long history of library cooperation, the improved service to the residents of Maine, and the potential for expanding the scope of this resource sharing should make this project particularly attractive to the national foundations and to foundations with strong Maine connections.

It may be necessary to provide reimbursement for net lenders since interlibrary loan and direct borrowing may increase dramatically. These statewide services are best supported with state funds, to support interlibrary loan and backup reference. Statewide needs are better met if the money goes to statewide services and not directly to serve local needs. However, a system can be built which provides statewide needs supported by state money combined with serving local needs with local money. It is unlikely that libraries, especially small to medium-sized libraries with limited staff, will be able to save money by cutting costs with automation. This rarely happens even with large, heavily staffed libraries. The benefit, instead, is in the increase in service possible with more knowledge of statewide resources.

Changing Service Patterns

With the current interlibrary network as it has developed in Maine books are always moved to users, but in some areas in the state it would be possible to move the users to the books. Today if an individual is a resident of one community and wishes to obtain materials from another library, it is usually necessary to send an interlibrary loan request and move the book to the user's library, a process which takes several days. In many cases if the library owning the book is close to the user, perhaps in the town in which the user works, the user may be willing to go borrow the book himself. In this instance, knowing the ownership and status of a book in another library and the ability to send a message to that library to hold a book for a given patron becomes vital.

This access to information about holdings in neighboring libraries may put pressure on the libraries of Maine to solve the political and financial difficulties surrounding the issue of reciprocal borrowing within the state of Maine. Given today's reciprocal borrowing status and possible technological advances, it is possible for a patron to know where a book is available and be willing to go get it immediately. However, the patron might not be permitted to do so because he does not have borrowing privileges in the library which owns the book. Instead, the patron's library must institute an interlibrary loan request for the book, a process which takes longer and is much more expensive than direct borrowing by the patron. The problems of reciprocal borrowing within Maine are quite likely to continue until such time as either all residents pay taxes to some library jurisdiction so that funding arrangements may be determined, or until Maine, like several other states, reimburses libraries for net direct reciprocal lending.

The Governor's White House Conference on Libraries passed a resolution on April 19, 1979 which stated: "A statewide borrowers card should be made available immediately." However, MAINECARD, a statewide borrowing program, faltered on the issued of providing a financial inducement, an increase in the base level of state per capita support of local library service to compensate those libraries who would have to forego nonresident borrower fees in order to take part.

Of the 221 public libraries in the State of Maine, 54 of them use MAINECARD; of the 16 academic libraries, 7 use MAINECARD; of the 250 public school libraries, 21 use MAINECARD. In some cases libraries, particularly those of the University of Maine, do not use MAINECARD, but have opened their libraries to all residents for a small fee.

At the present time there is no provision for overdue retrieval or patron control if materials are loaned to nonresidents. One Maine library stated that a very wide level of joint automation activity will probably remove reservations concerning MAINECARD use.

Governance

The development of this complex plan will require a cooperative effort on the part of the Maine State Library and the libraries of Maine. A governance structure must be developed which will recognize the interests both of the participants and the funding sources. Since the major funding for this plan is most likely to come from state sources and grant funds, the political and legal question of whether or not the Maine Legislature will give funds to any other organization than the State Library must be addressed. If the State Library remains as the funding source then the State Library and the Board of Library Commissioners will continue to have a major role in the formal governance of the emerging plan. Whether formally constituted as the Board of Directors of a new organization or as a sub-committee of the Board of Library Commissioners, a group similar to that of the *Ad Hoc* Library Automation Committee will provide the major direction for the project. Since the major participants will have significant local funding committed to this project they must have strong representation on the Board of Directors. The Board of Directors must be composed primarily of participants and potential participants in the plan, with some representation from smaller libraries to insure that their needs will be expressed. In virtually every successful cooperative automation effort the decisions are made by the funding source (the greater the percentage of funding the stronger the role) and the participants. This Board of Directors should be a decision-making group, which meets frequently, probably monthly. It should be restricted in size to no more than 10 or 11 members with *ad hoc* sub-committees constituted if different areas of expertise are needed to address a problem.

A PLAN FOR MAINE - RETROSPECTIVE CONVERSION

Despite the uncertainties involved in determining future needs, it is important that a starting place be determined. Resources may not be available to develop the entire statewide automated system at one time. It thus becomes important to determine a method which will permit beginning at an affordable level with growth as the success of the system is demonstrated and more libraries are able to participate. However, even if the money were available, it would not be possible to begin the entire system immediately since few libraries have been able to convert information about materials held into the machine-readable form necessary for an automated system.

Before a library can begin any online automated activity, existing bibliographic records must be put into a form which can be used by a computer. This process of creating machine-readable records for currently-owned materials is called retrospective conversion. For all but the largest Maine libraries, the short-term as well as the long-term goal should be to convert information about all titles held into machine-readable form. This process may take many years for a library such as University of Maine at Orono, but it should still be a long-term goal. Until information about all titles is in machine-readable form it is not possible to rely completely upon the automated system database for information about the holdings of a library. Until retrospective conversion is complete, information about those titles not yet converted is not available to the library community at large.

The database created by a library today will last through several generations of automated systems and well into the 21st century. Since this database will be used for a variety of purposes, some of which are not yet known, it is important that great care be taken to use the necessary standards and to maintain high levels of quality control. Retrospective conversion is a necessary first step. It is not glamourous, but it must be done. Only by beginning retrospective conversion can the libraries of Maine begin the process of using automated services.

Current Machine-Readable Records

The primary source of machine-readable bibliographic records about materials held by Maine libraries is OCLC. (Figure 7, page 21 and Figure 8, page 24) Many of these records, however, are not currently usable for resource sharing purposes since they were created by the Maine Card Service. These records, when searched online at an OCLC terminal, indicate that the titles were cataloged by the Maine Card Service, but not which specific libraries hold the title.

School libraries do not use the Maine Card Service, but frequently receive materials cataloged by the jobber from which they were purchased. Although the library only receives printed catalog cards, these cards are often produced from machine-readable records. Libraries of all types which buy these pre-processed materials should ask their jobbers whether it is possible to also receive machine-readable cataloging in full MARC format at a nominal price. The jobber should be asked to retain the magnetic tapes until they are needed.

A high priority should be given to completing retrospective conversion at the ARRC centers since they will continue, at least for the near future, as the core lending collections. However, retrospective conversion must also begin at medium-sized libraries to expand the scope of material availability. Once the automated system is implemented, particular attention should be paid to those subject areas where materials are not found within the state. Libraries with specialized collections in these subject areas should be encouraged to convert these materials on a priority basis.

Methods of Retrospective Conversion

There are three basic techniques for retrospective conversion. The first is to match the library's titles against a bibliographic record either online or on a computer-produced medium. The second involves submitting partial records or search arguments on magnetic tape or microcomputer floppy disks to be matched against an existing file with records returned to the library for editing. The third is to key full records into a computer or computer medium. The third method is not recommended except for the very small percentage of library records which cannot be found on conventional sources and which must be added to the nation's machine-readable bibliographic file. Before this step is taken, it is imperative that the library evaluate and determine the value of that material to the library.

Libraries have been converting bibliographic records into machine-readable form using the MARC standards for 17 years. During that time many libraries have completed a full retrospective conversion of their collection. Titles which cannot be found on one of the standard sources of machine-readable bibliographic records and which are not of a highly specialized or local nature should be seriously evaluated as to their worth and retention in the collection. Larger libraries in the State of Maine have broader collecting responsibilities than do small libraries and will have many more unique titles which should be retained. It is true that thinly-held titles will be better used once information about their location is available on a statewide basis. However, serious consideration should be given to whether the current holding library is the appropriate location for materials which do not fit into the library's standard collecting profile.

Combinations and variations of the three conversion methods are possible, and no single method or service can be easily categorized. This report will mention some types, sources, services, and combinations, but in no way attempts to be definitive. New and expanded services for retrospective conversion occur frequently, and should be evaluated for their appropriateness for conversion of Maine libraries.

It should be remembered that no one method is suitable for the entire state, or even for one library. The method chosen will depend upon the time available for conversion, the availability of personnel and trained supervisors, the accuracy and condition of the current records such as the shelf list, the percentage of unique materials in the collection, the cataloging processes used by the library, and the place of the library in a systematic statewide conversion scheme. Costs for using various methods of retrospective conversion vary considerably, with the highest costs associated with methods which provide the personnel to perform the conversion and which have access to high-quality, extensive databases.

For budgeting purposes it should be assumed that it will cost $1.00 for every unique title converted and $.25 for each additional holding library, including staff costs. These figures are in no way absolute, but are useful for budgeting. In many cases libraries with a high percentage of titles on the LC MARC database will be able to convert their collections for much less.

The bibliographic utilities, OCLC, RLIN, WLN and UTLAS, are a primary source of cataloging data and their large resource databases are often used for retrospective conversion. OCLC offers its database for retrospective conversion via three methods. Libraries which currently use OCLC for cataloging can use the OCLC database for retrospective conversion at greatly reduced rates for approved projects. These reduced rates are in effect during certain hours when the system is less heavily used. Multiple terminals can be used; this temporary need for terminals has been aided by several state libraries which own "floating" terminals to be rented to a library during the retrospective conversion period and later moved to another library. This method requires trained personnel and is dependent upon the number of terminals and the response time of the OCLC system during the non-prime time hours. These hours for the State of Maine occur before 8 a.m. and between 5 and 10 p.m., and on Saturdays.

OCLC also offers a service, RETROCON, in which OCLC staff perform the entire retrospective conversion working from the library's source documents which are sent to Dublin, Ohio. This method is the most expensive use of OCLC services, but does not require supervision or training of staff, nor is it dependent on terminals being installed, hours of operation, and response time rates. This method is only usable when the library's source documents are in extremely clear, unambiguous form. It is most effective when the library has adopted standard cataloging processes and can accept currently available OCLC records with virtually no change. OCLC's newest service, MICROCON, uses an OCLC M-300 terminal (a modified IBM PC) which is loaned to a library for the duration of the retrospective conversion. The library can use a Library of Congress Card Number plus an author or title search key, or a standard OCLC author/title search key, a title search key, or an author search key, as well as a local call number, a 590 local notes field, or an 049 or 949 holdings field. The library enters brief search keys onto the floppy disk of the M-300. When 30 disks of approximately 600 records each have been created, all of the floppy disks are sent to Dublin, Ohio where they are passed against the OCLC database. The library pays for each match which results in one discreet bibliographic record. The search keys submitted by the library which are not matched against an OCLC record or which result in multiple matches are returned to the library and no charge is made for these titles.

A second method of retrospective conversion, including either of the other two OCLC services, can be used for these non-matches or multiple matches. MICROCON appears most appropriate for materials which have unique call numbers, since the only information reflecting the titles which have not been converted will be the information submitted by the library. If the identifying information which enables the library to locate the library record for the material not converted is not included in the search key, the library will not be able to determine which materials have not been converted. For instance, the library cannot locate the unconverted title and its shelf list card if the only search arguments entered were a Library of Congress Card Number and a call number "Fiction."

Great care must be taken in the use of any retrospective conversion service when converting fiction titles for public or high school libraries. In the early 1980's the standard cataloging code used by libraries was changed. The Anglo-American Cataloging Rules, Version 2 (AACR2) changes the access points for many bibliographic records. Extensive changes were made to records held by bibliographic utilities and retrospective conversion vendors to reflect this change so that a title which was once cataloged under John Creasey will now be cataloged under Anthony Morton, one of his pseudonyms, the pseudonym used on the book itself. Although this process recognizes the need to identify material by the name familiar to patrons and to link together various pseudonyms via cross-references, the practice of converting records which were originally cataloged one way and now have new access points under AACR2 can lead to problems for libraries which shelve materials by author's last name. If the library originally cataloged the material under Creasey and thus shelved the books in the C's the book will be difficult to locate. If the library matches the record against an LC Card Number and receives a title cataloged under Morton, the patrons who have been told that fiction is shelved according to the author's last name will search for the book in the M's while the physical book remains in the C's. For this reason, extreme care must be taken in the use of source databases with any retrospective conversion plan which submits search arguments to source databases for materials which do not have unique call numbers. There is no problem for materials which are completely identified by a call number if the main entry is changed. Even if the Cutter number does not match the current main entry, the material can still be found since a call number is a call number is a call number. It is for the same reason that the use of automated name authority control must be approached with extreme care by libraries which do not use unique call numbers for some materials.

Producers and vendors of catalogs from machine-readable files are another source of bibliographic records. Most vendors provide access to the LC MARC file (post-1967 monographs, primarily in English) and to the databases of their other customers. Some of these services are online so the library can see the records which are being converted and others are offline services where the library submits search keys. Autographics, a major producer of COM catalogs, provides a service, AGILE-II, with online access to recent LC MARC records and the bibliographic records of other libraries, as well as indices to the entire LC MARC database (the full records for older LC MARC titles are available online the next day). A library may add its own call number and holdings as well as modify an existing record before storing it in the library's own database. Unlike the bibliographic utilities whose charges are based on a per title fee, a single monthly fee per terminal covers all charges, including online storage of the library's database with AGILE-II. This service is most effective when a library is able to operate during the service's full hours of availability, thus reducing the cost per title.

Brodart, another major vendor of COM catalogs, has products which include both online and offline matching against LC MARC and customer databases. The firm's "Micro-Check-By-Mail" service accepts computer floppy disks sent to Brodart to be matched and is the lowest cost service in the package. "Micro Check Online" provides online access to Brodart's files. "Interactive Access" allows a library to modify its own database online. The prices of these services increase as the options become more sophisticated and require less editing work by the library staff.

Most vendors have available to them the LC MARC files and the files of other customer libraries. These file, by definition, are weaker in materials published before 1968 than they are for current materials. Under contract with the Library of Congress Carrolton Press converted that part of the Library of Congress catalog not already in machine-readable form and therefore not currently available as part of the LC MARC database. This database, REMARC, is a particularly good tool for research libraries and other libraries with large foreign language collections. REMARC is currently available through several sources including UTLAS, which has absorbed the Carrolton Press operation.

MITINET is a retrospective conversion process developed by the Statewide Wisconsin Database Project. The library receives a microfiche copy of the Statewide Wisconsin COM catalog (WISCAT), matches its titles against the titles on the COM catalog, and enters the unique number of the matched record, plus the library's call number and holdings into the library's microcomputer. The microcomputer floppy disks are sent to the COM vendor who adds the library's information to the statewide database. There is no way to change the bibliographic record except for the call number and holdings information. This service has been expanded to serve other states by using the LC MARC files instead of the Wisconsin COM catalog files. This method has been used quite successfully to convert high school and small public libraries in the State of Wisconsin and to add them to a statewide database. Even volunteers and untrained staff have been able to convert an average of 40 titles an hour. This technique is not limited to one user at a time since one person can use the microcomputer and another person can use the microfiche.

Bibliofile is a comparatively new product developed by The Library Corporation of Charles Town, West Virginia. It uses CD-ROM technology to provide the Library of Congress MARC database to a library. The entire MARC database of over one and a half million titles is mastered onto two CD-ROM disks. The Library Corporation in its Bibliofile product provides the library with a CD-ROM player, the necessary software, and disks updated monthly containing all current LC MARC cataloging. The library supplies an IBM PC with monitor and printer. The LC MARC database is indexed by Library of Congress Card Number, author, title, and author/title combination. The library searches the database and finds the record which matches its title. Libraries can change any field in the record and can add local information such as call number and holdings.

When the library finds a match and has modified the record, the record is written onto a floppy disk. The contents of these floppy disks can be transferred to standard MARC format magnetic tape by The Library Corporation; these formatted tapes are then acceptable to virtually every library automation product currently marketed. Smaller libraries should expect to find more than 95% of their post-1968 titles on the Bibliofile disks (as with any LC MARC file match). Even larger libraries will find a significant percentage of their titles as a part of the LC MARC database. The Bibliofile service costs $4,000 the first year for the CD-ROM player, software, and monthly updates, with ongoing annual costs of approximately $1200. Because the system uses the LC MARC database there are no royalty payments or copyright restrictions on the use of the data. The costs are fixed and are not sensitive to the number of units actually processed through the system, the higher the number of titles converted the lower the cost per title.

Bibliofile is a useful tool not only for retrospective conversion but for ongoing cataloging since it has the capability of producing catalog cards and spine labels. The Maine State Library should investigate the use of this product as a possible method for expanding the use of the Maine Card Service. The Maine Card Service is currently operating at the limit of its funding; it is only possible to expand the number of libraries served by the Card Service if the cost per transaction is reduced. Bibliofile may also provide another source of current cataloging information for libraries with popular collections since it can also print catalog cards. Due to the nature of this device, information about holding libraries is not made part of the OCLC National Union Catalog.

For many libraries retrospective conversion will not require a separate operation, but will consist of matching library holding records against titles already resident in the statewide automated system. Libraries add only holdings and copy information to an existing bibliographic record. Methods such as MITINET, Bibliofile, and matching against the statewide automated system are particularly appropriate for small libraries which are unfamiliar with complex cataloging rules.

Retrospective Conversion Recommendations for Maine

These two techniques, Bibliofile and MITINET, which have been developed especially for smaller to medium-sized libraries with a large percentage of their titles published after 1967. This profile matches that of most Maine libraries which have not already converted large portions of their collections to machine-readable form. Another method, such as the use of an OCLC retrospective conversion account, will be needed for non-LC MARC (Library of Congress MARC cataloging) titles. This second method should be used by a library only after the initial method has converted those titles which can be found on LC MARC. For larger resource libraries which have not already converted a large percentage of their collections to machine-readable form, one of these LC MARC sources should be used first, followed by OCLC or REMARC. These libraries should create a statistically-significant sample of those titles which have not been converted using an LC MARC source and send the sample to several conversion sources including OCLC and REMARC to determine the success rate and quality of cataloging received, as well as the cost. The implications of participation or non-participation in the OCLC "national union catalog" should also be carefully considered by these major libraries.

The issue of copyright and data ownership is extremely sensitive as libraries attempt to combine machine-readable bibliographic records from multiple sources to be used in a shared automated system. At the present time it appears that records shared among many libraries, such as a statewide automated system, which are not resold constitute a permitted use of the copywritten OCLC information. This issue should be watched extremely carefully by the Maine State Library in its role as the central OCLC provider for other libraries.

Standards for Bibliographic Records

It is important that cataloging done for statewide resource sharing be performed to full, nationally accepted library standards. These include use of the MARC II standard communications format or USMARC format, Anglo-American Cataloging Rules Version 2 (AACR2), and Library of Congress subject headings.

This latter standard allows the database to operate under automated authority control, since Library of Congress subject records are in machine-readable form and are available through subscription from a number of vendor sources. Automated authority control also allows for the automatic creation of cross-references. Some difficulty may result from the fact that many libraries within the state use Sears subject headings for cataloging and do not wish to deal with more complex entries associated with Library of Congress subject headings. If care is taken during the conversion it is possible to include both Sears and Library of Congress headings on the same record.

It is possible to use multiple methods for retrospective conversion if proper standards are used. The use of the MARC format will tie these records together. Since it will be vital that copies of the same bibliographic record be merged automatically, libraries must ensure that such match points as Library of Congress Card Numbers, International Standard Bibliographic Numbers, and International Standard Serial Numbers be included in every record converted. It is only by matching these specific numbers that a computer will be able to determine that two records represent the same entry.

Despite the complex nature of a full MARC record the availability of these MARC records in machine-readable form means that it is usually easier and less expensive to accept a full MARC record during conversion than to modify and abbreviate this record. This is particularly true because the elements which are eliminated today may be required for next year's applications. In virtually every case where libraries created abbreviated bibliographic records in machine-readable form during the 1960's and 1970's they are now having to perform a second conversion to upgrade and expand the original bibliographic records. If information is not contained in the original record it is impossible to obtain that information from a computer or to use that information as an access point to the record.

As computer storage has become less expensive the economic incentive to use brief records begins to disappear. One library has estimated that it would save less than 2% of disk storage space in its large circulation system if it eliminated the MARC fields it did not currently wish to use. The library or the patron may not require a field of a bibliographic record for one purpose, such as circulation, but may need it later for acquisitions or an online public access catalog.

Converting the record into full MARC only places that information into an automated system. Once the information is in the automated system, various types of brief and complex displays are available. All fields of all records do not have to be displayed for every search; however, if the information is not in the original record it cannot be displayed under any circumstances.

If a library uses several different automated systems, such as a bibliographic utility for cataloging or a book jobber acquisitions system, and an automated library system for circulation control and the database system, it is important that interfaces be available so that not more than one database has to be maintained. These interfaces from one automated system to another are possible only because all vendors are able to use the MARC communications format for bibliographic records.

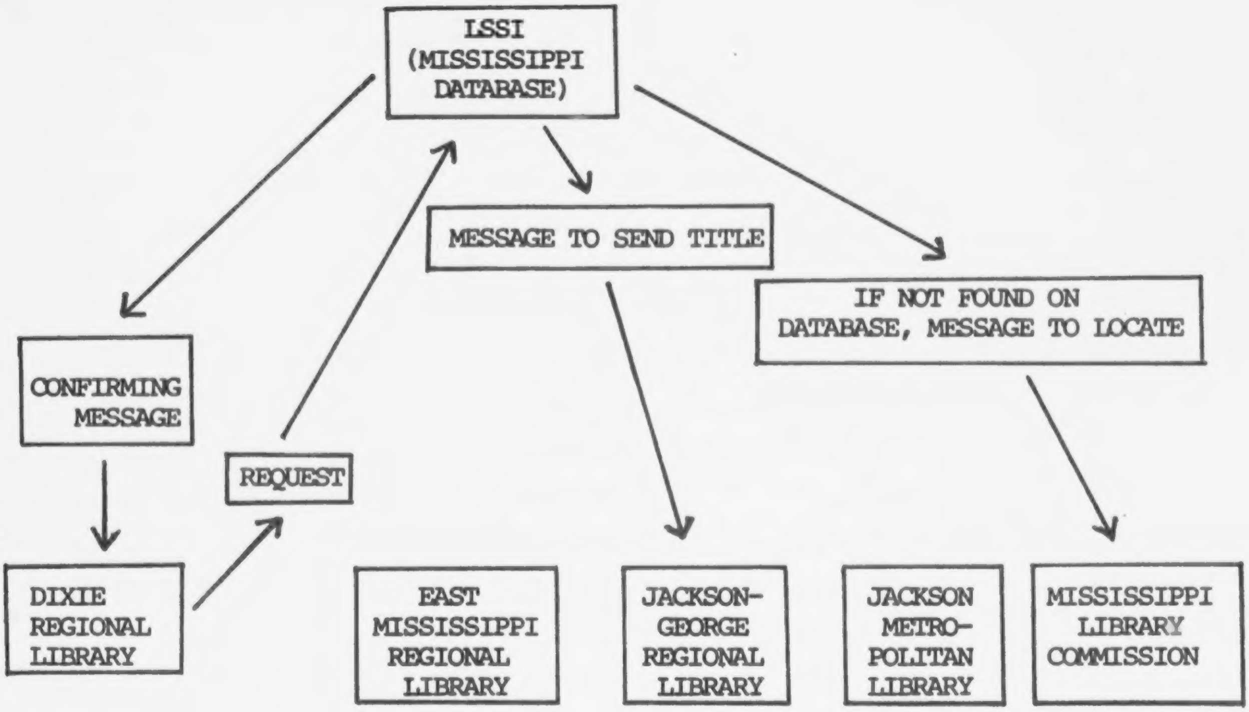
The concept of one standard bibliographic record with multiple entry points such as author, title, subject, and Library of Congress Card Number must be accepted if the storage costs of a statewide system are to be affordable. It will be necessary to create a bibliographic standards committee to deal with issues such as which records to accept, which records take precedence, and which variations are permitted. The committee must include representative from technical services staff, public services staff, and administration of various types and sizes of libraries to ensure that the decisions reflect the needs of all Maine libraries.

An Interim Plan

An interim move towards the development of a statewide automated system would provide a method for using the available bibliographic records more effectively, while also creating more machine-readable records reflecting materials held in Maine. As mentioned earlier in this report, Mississippi libraries have been using Library Systems and Services, Inc. (LSSI) of Rockville, Maryland to provide these functions, as well as to serve as a switching point for Mississippi interlibrary loan.

Twenty-eight Mississippi libraries have loaded their machine-readable records into the LSSI computer in Rockville, MD. They use IBM PCs, XTs, and ATs with special programming from LSSI to access the records. The system provides a workform for author-title, subject, audiovisual, and serials requests. The library also creates a string of three preferred lending locations, with the Mississippi Library Commission as the default fourth location. Requests are transmitted at night when telephone rates are lowest, and holding library information is returned during the next transmissions. Due to their volume of interlibrary loan requests, Mississippi libraries are transmitting requests three times a week. LSSI charges Mississippi libraries $.25 for each request handled.

For example, the Dixie Regional Library in Pontotoc, Mississippi needs a copy of I Lost It At the Movies by Pauline Kael but does not own the title and does not know which Mississippi library might own it. The library would create a request on its IBM PC suggesting that the title might be obtained first from the East Mississippi Regional Library in Quitman, and if not held there then from the Jackson-George Regional Library in Pascagoula, and if not held there then from the Jackson Metropolitan Library in Jackson, and, as a default, if not held there then from the Mississippi Library Commission in Jackson. That night the LSSI computer telephones the Dixie Regional Library to pick-up the request information which has been left for it. The LSSI Mississippi database is searched for the title to determine if it is held at any of the three specified libraries or the Mississippi Library Commission. If the title is found at a specified library, the Jackson-George Regional Library, for instance, a computer message is left at Jackson-George to to picked up the next morning requesting that the title be sent to the Dixie Regional Library. A confirming computer message is sent to the Dixie Regional Library that the title will be sent from Jackson-George. If the title is not found at one of the selected libraries, a computer message is sent to the Mississippi Library Commission requesting that the title be sought via other means, such as the OCLC ILL subsystem for out-of-state borrowing.


LSSI (MISSISSIPPI DATABASE)
MESSAGE TO SEND TITLE
IF NOT FOUND ON DATABASE, MESSAGE TO LOCATE
CONFIRMING MESSAGE
REQUEST
DIXIE REGIONAL LIBRARY
EAST MISSISSIPPI REGIONAL LIBRARY
JACKSON-GEORGE REGIONAL LIBRARY
JACKSON METRO-POLITAN LIBRARY
MISSISSIPPI LIBRARY COMMISSION

While there are some questions regarding OCLC copyright and contributions to the "national database" if another service is used, a cost-effective method for Maine to move into the future needs to be found. A program similar to that developed for Mississippi would allow Maine to expand its current excellent resource sharing program, to permit more Maine libraries to be interlibrary loan lenders and reduce reliance on out-of-state library collections, and to build towards a full statewide automated system to serve the needs of all types of Maine libraries and, most importantly, the citizens of Maine.

MICROCOMPUTERS IN LIBRARIES

There are a growing number of microcomputers used by Maine libraries (Appendix B). Often a microcomputer is first used for word processing and budgeting applications, and is then expanded into specific library applications, such as catalog card production.

As libraries expand their use of microcomputers it is important to recognize the difference between the use of a microcomputer for an application and the use of a minicomputer or mainframe. The differences are primarily in the amount of storage available and the number of applications that can be operated at once, although technological improvements are reducing these limitations.

With more small libraries using or wishing to use microcomputers, a higher level of advice and assistance is required. Support for microcomputer use needs to be expanded at the state level. A formal clearinghouse of library programs and templates should be developed, building upon the work done by some national clearinghouses. The experiences of libraries using a specific software package should be shared, so that other librarians can experiment with these programs, learn from others, and make informed purchase decisions. Partnerships between experienced users and novices would ease the learning process. This work has already begun through the efforts of Karl Beiser's (Northeastern Library District, Maine State Library) efforts in conducting workshops, list of users and machines statewide (see Appendix B), publications, and a computer magazine union list. The Maine Computer Consortium (Doris Ray, Maine Computer Consortium, P.O. Box 620, Auburn, ME 04210) makes software available to school librarians and teachers for review.

With a strong emphasis at the state level on providing the assistance necessary for increased microcomputer usage, it may be possible to develop volume purchase discounts on hardware and software. A used equipment exchange may also be developed, since most microcomputers are replaced because the user wishes to expand into a larger multi-functional system, not because the system is broken. There is a limited used equipment and trade-in market; thus, it is often not practical to try to recover a large part of the original purchase price.

ONLINE REFERENCE SEARCHING

Online searching of reference databases provides access to current information in many disciplines, providing information at all levels from the basic to the highly technical and esoteric. Early online databases were duplicates of their printed counterparts and were primarily bibliographic, providing citations to journal articles. There are, however, a growing number of databases which have no printed counterpart. The nature of the databases themselves is changing as more numeric and full-text databases are produced. Database searching is becoming more important as an increasing number of questions cross traditional subject boundaries and require searching in multiple disciplines. Online searching also offers the most current information, handles new terminology, correlates concepts from several disciplines, and provides access to databases when a library cannot afford to own the high-priced print version to use for a few questions a year.

Online databases are accessed by a terminal, usually a microcomputer, using telephone lines to reach a central computer. Telephone costs are reduced by using Value-Added Networks (VANs). VANs are systems of telephone lines leased by a service such as Telenet or Tymnet and used by many subscribers to reach computers located throughout the country. The costs are distance-independent and are considerably less expensive than long distance telephone rates. A subscriber telephones an entry point into the VAN, called a node. Ideally, nodes can be reached by a local telephone call and are always available for use. Unfortunately, this is not true in Maine, where there are few, very busy nodes. As searching levels increase there should be more nodes available, since VANs are a revenue-driven business. They will establish nodes wherever the economics can justify a node.

Online database searching may generate more interlibrary loan requests, particularly for photocopies of journal articles. Frequently a search results in a citation to a journal not held by the searching library. However, with abstracts in many citations and a more complete knowledge of the available materials, these requests are more specific with a high probability of providing the information needed. If the necessary journals cannot be located, it is possible to acquire copies of articles through clearinghouses which follow copyright compliance procedures. The Maine State Library uses mail-order suppliers through Dial-Order if it cannot obtain material using the Maine Union List of Serials and OCLC.

Reference database searching is currently available to any citizen of Maine through TALIMAINE (Technical Assistance and Library Automation for Maine). The local library accepts requests which are sent to the Maine State Library using an 800 telephone number. A trained librarian searches appropriate reference databases at no charge to the patron and sends the results back to the local library for distribution to the patron. Searches range from leukemia and the environment to wastewater management to Christmas trees to Wayang puppets.

The service averages about 35 searches per month and serves all segments of the population. (Figure 11, page 67, Figure 12, page 68, Figure 13, page 69) This service is not used frequently enough and should be expanded. It is important that Maine citizens become aware that online services and answers to complex information questions are available through their local libraries at no charge. A strong public relations effort needs to be made to inform the public of the availability of TALIMAINE services. The small number of searches performed each month is in no way indicative of the information needs of the citizens of Maine, but is more likely a result of a lack of knowledge about this service.

Free searching is also available through The Information Exchange, a service focused on providing service to educators. This service also uses an 800 telephone number to receive requests from educators desiring information about research and resources. This is an expanded service which provides more focused assistance to a special group of users. The Information Exchange provides access to national databases, but also searches a computerized file of Maine resources, the Maine Resource Bank, built by The Information Exchange. Another specialized Maine database is the Maine Index of Natural Resources, a unique source of information about Maine. These state databases provide a depth of information unavailable elsewhere and should be continued. More publicity should be generated regarding their availability and the possibilities of providing access on a fee basis to other New England libraries and schools should be investigated.

There is a large volume of searching of medical databases by Maine's special libraries, dwarfing all other types of searching in Maine. In an effort to reduce costs for this searching the National Library of Medicine, producers of the MEDLINE database, is offering subsets of the database to mount on local computers. These subsets may be defined by subject, time period, language of publication, journal title, or other delimiting factors. The Paper Chase searching system from Boston's Beth Israel Hospital is in use in Maine and with a MEDLINE subset based upon holdings of Maine medical libraries could provide citation information for which the journal articles can be easily obtained. Use of direct MEDLINE searching is still required for more comprehensive sources and the most recent articles.

The Future

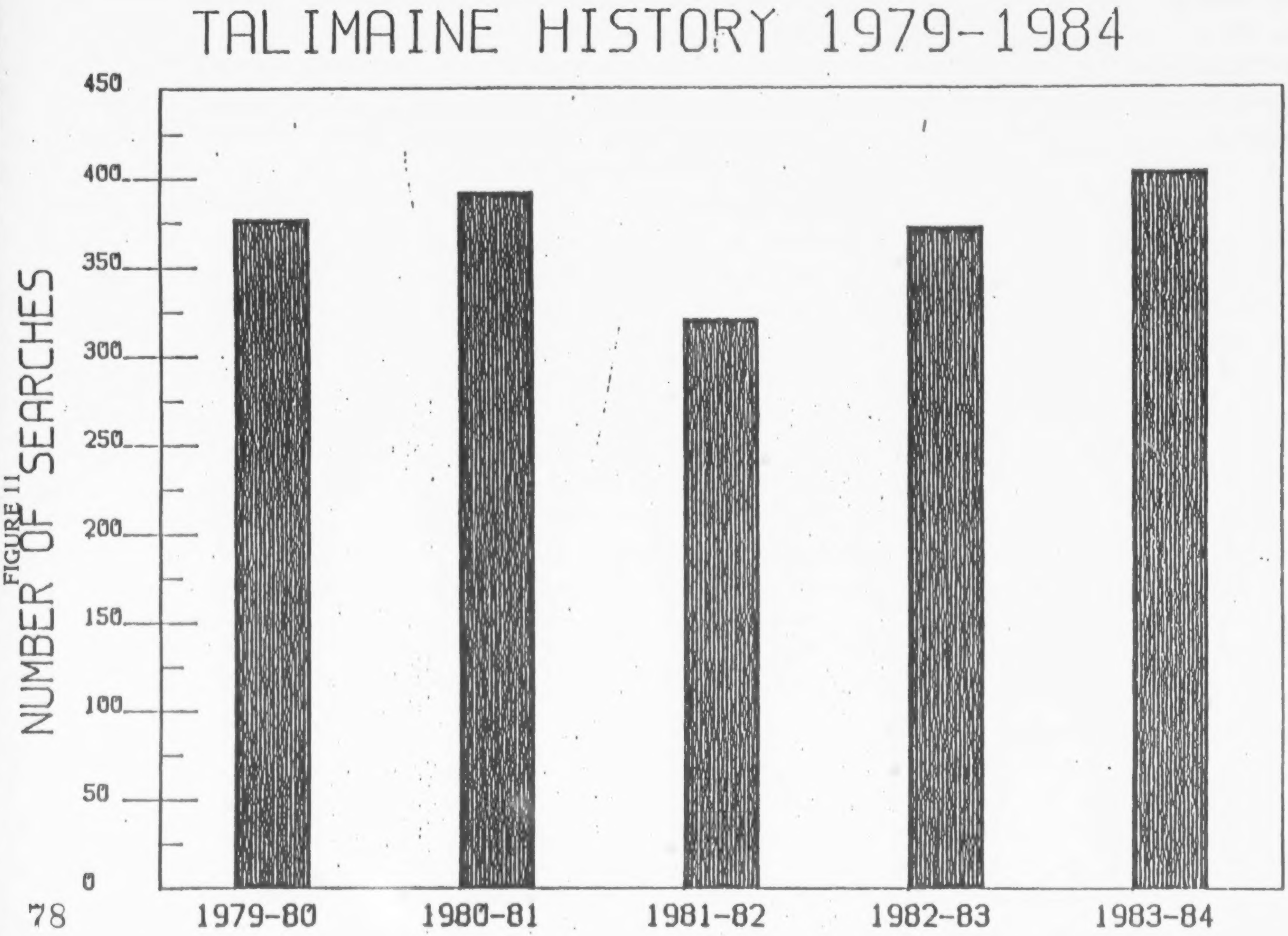
More searching of online databases will occur as patrons become more aware of the information available through these sources and, in many cases, search databases themselves with their personal computers. More numeric and full-text databases will provide direct information while bibliographic databases provide citations to journal articles.

There have been suggestions that searching for public libraries be decentralized into regional libraries. However, the searching done by TALIMAINE only averages 35 searches a month, since most hospitals, special libraries, and four year academic institutions are already doing their own searching. The searches by TALIMAINE cover a wide variety of topics, requiring knowledge of many databases. The use of regional searching centers might reduce the number of searches performed by one librarian below the level necessary for the librarian to maintain proficiency. A good, practiced searcher will provide the most appropriate information at the lowest cost. The use of the 800 telephone number means that the search process takes no longer on a statewide level than on a regional level.

Microcomputers with telecommunications packages rather than special terminals can be used to search databases. Thus, libraries already owning a microcomputer can do searching with a low initial investment. The use of end-user search facilities, such as Knowledge Index, BRS After Dark, and Colleague, can reduce initial training costs, although the results may be less comprehensive than with searches using the full services. The University of Maine at Orono is experimenting with the use of BRS After Dark for direct end-user searching by graduate students and faculty.

Libraries are beginning to use online searching as a ready reference tool, substituting searches for owning the printed source. In this sense, online searching is viewed as another reference tool whose purchase is based upon cost per use. Instead of purchasing printed materials in anticipation of use, online searching permits a library to purchase the information source only when it is known to be needed. It is likely that the most appropriate use of online searching for many libraries is ready reference of frequently used databases, reserving the more complex, less familiar types of searching for TALIMAINE or The Information Exchange.

FIGURE 11


TALIMAINE HISTORY 1979-1984
NUMBER OF SEARCHES
450
400
350
300
250
200
150
100
50
0
1979-80
1980-81
1981-82
1982-83
1983-84

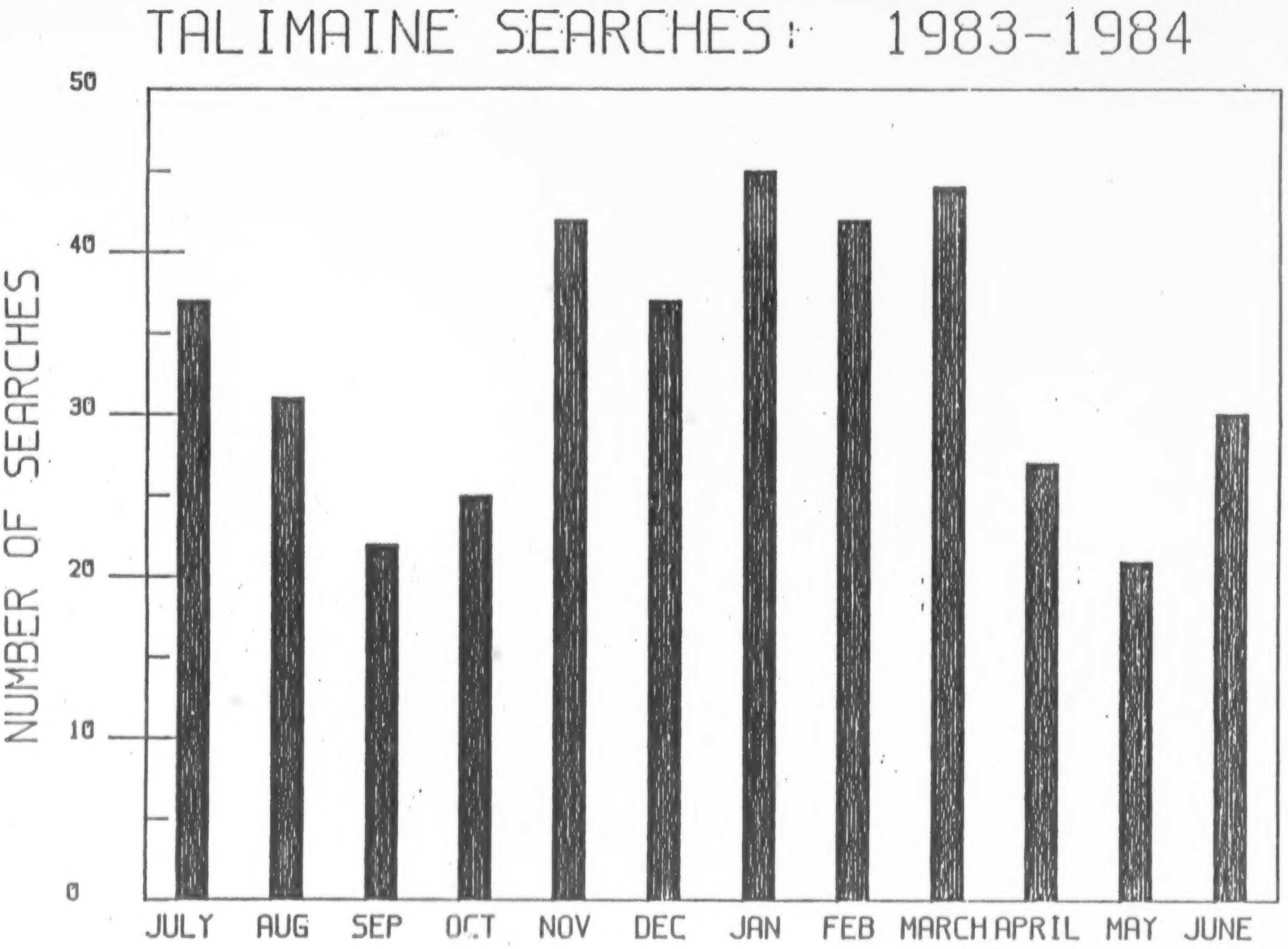
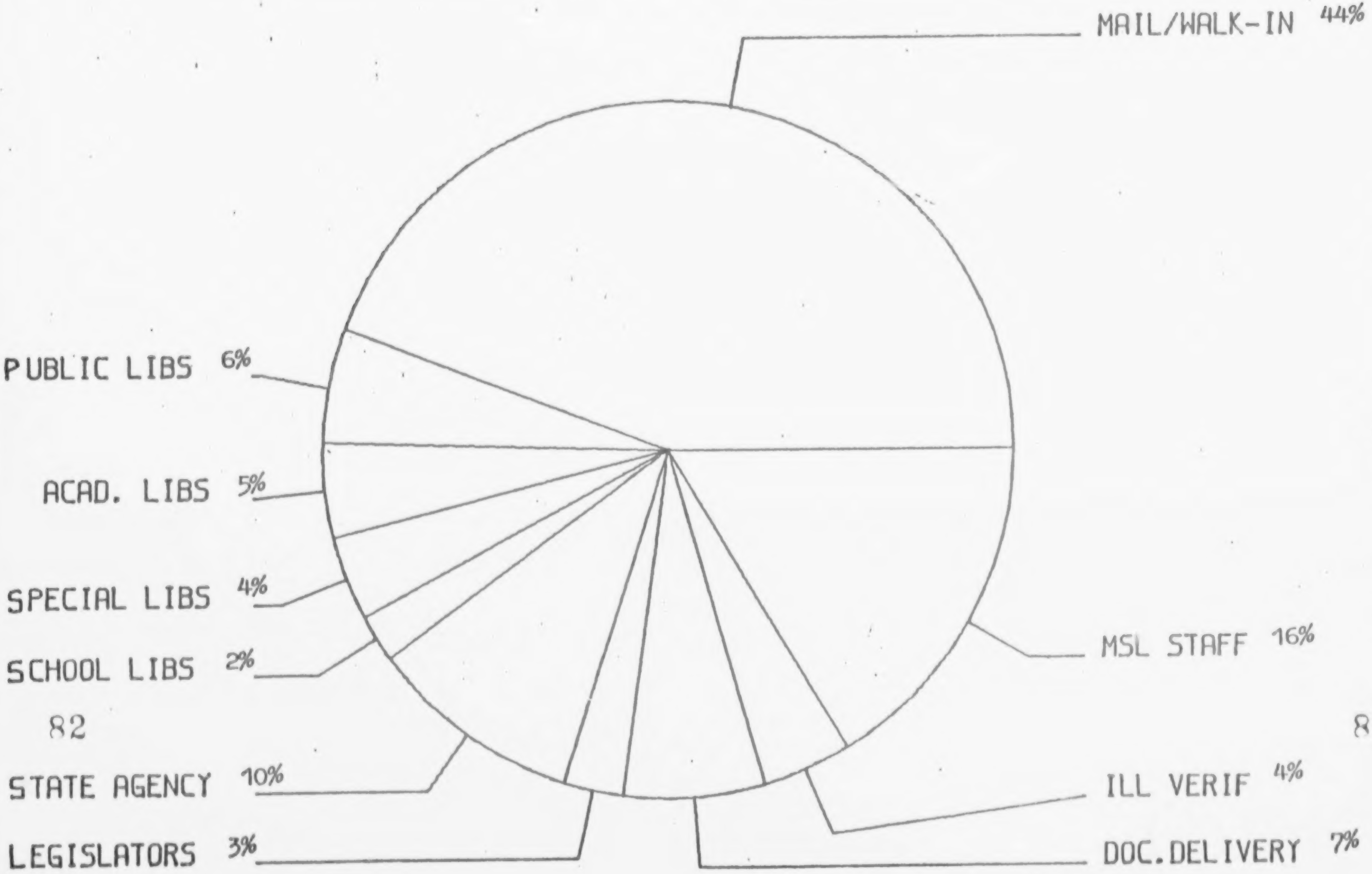

TALIMAINE SEARCHES: 1983-1984
NUMBER OF SEARCHES
50
40
30
20
10
0
JULY
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MARCH
APRIL
MAY
JUNE

FIGURE 12

FIGURE 13

TALIMAINE CLIENT BREAKDOWN 1983-84



SERIALS AND DOCUMENT DELIVERY

Serials

The Maine Union List of Serials (MULS) is a very effective tool. Health science libraries, heavy users of serials titles, report that they find 70-75% of their journal needs within Maine. The special libraries feel that MULS meets most of their needs for serials information as contrasted to the problems associated with locating monographic titles. A more responsive product could probably be developed if the file was available online, particularly so maintenance could be done by individual libraries. Once the statewide automated system is operational, serials titles and holdings should be included in the database.

Throughout the state a need was expressed by librarians from all segments of the library community for a less expensive current index to the Maine Times. Many school and public libraries cannot afford to subscribe to the weekly cards, but have a strong need for indexing more current than the microfiche and print products.

Document Delivery

Both interlibrary loan and the provision of photocopies of journal articles require that the material eventually be delivered to the requestor or the requestor's library. This has been a tremendous problem in some states and studies of improved document delivery methods have been conducted, particularly in Washington, Pennsylvania, and New York.

At the present time, very efficient mail service provides good delivery in Maine. However, as the volume of interlibrary loan transactions increases and more libraries become lenders, the current delivery methods may no longer be effective. As that point approaches, a careful study should be made of the experiences in other states and their applicability to Maine's situation.

A number of Maine librarians have suggested that telefacsimile would be an appropriate method for delivering photocopies. This method of document delivery does not appear feasible for Maine libraries at this time. The quality of the received material is quite varied. Since only single sheets can be transmitted in most current telefacsimile equipment, material must be copied before it can be transmitted. Thus, the telefacsimile can never be any better than the best photocopy that can be produced. This also means that color in charts, graphs, and illustrations is lost. Telefacsimile is also very expensive. The most recent experimental use indicates that costs can be kept under $1 per page if a minimum of 600 pages per month are sent on a machine. For libraries transmitting a lower volume at regular telephone rates, the costs can increase to $7.12 per page.

RECOMMENDATIONS

Numerous recommendations concerning automation activities in Maine but which do not directly involve the five node plan and are not included in the section on Next Steps have been mentioned in this report. They have been gathered in this section for easier reference. Additional information regarding these recommendations can be found on the pages indicated.

Short-Term Priorities

1. Develop a governance structure for future activities (Page 48)
2. Establish a bibliographic standards committee. This committee should be able to assist in the selection of retrospective conversion methods and the collections to be converted (Page 59).
3. Seek outside grant funding for planning and implementing first the expanded use of the current machine-readable records, and second the five node plan (Page 46).
4. Expand support for microcomputer use on a statewide level with the assignment of staff and the development of information clearinghouses (Page 62).
5. Increase participation by Maine libraries in statewide telecommunications planning (Page 41).
6. Extend the Maine Card Service to more libraries, including school libraries (Page 47).
7. Increase publicity for the TALIMAINE service (Page 64).
8. Libraries with microcomputers and telecommunications capability should experiment with DIALOG's Knowledge Index and BRS After Dark primarily as a ready reference source, as demand indicates (Page 66).

Longer-Term Priorities

1. Increase the use of MAINECARD. (This is included as a longer-term priority since it is felt that progress towards this goal will be easier once elements of the five node plan are in place) (Page 47).
2. Develop a used-equipment exchange for microcomputers and peripheral equipment (Page 62).
3. Increase marketing and funding efforts for the Maine Resource Bank and the Maine Index of Natural Resources (Page 64).
4. Investigate the local use of MEDLINE subsets (Page 65).
5. Investigate development of an online Maine Union List of Serials (Page 70).
6. Improve cost, currency and availability of the index to the Maine Times (Page 70).
7. As the volume of interlibrary loan materials increases, investigate alternate forms of document delivery, building upon the experiences of other states (Page 70).

THE NEXT STEPS

The Near Future: Step-By-Step

Working closely with the Ad Hoc Statewide Automation Committee:

The First Step: A Project Director should be employed by the Maine State Library to advance the initial stages of the project. The scope of the undertaking and its resulting impact on Maine library service demand the focused attention of a library automation planner at a senior level -- in the present state job structure, the equivalent of a Librarian IV. The Project Director should serve as a facilitator during the formation and initial meetings of the expanded automation committees, including those in governance and participation and on bibliographic standards and provide a clearinghouse for all information regarding progress towards statewide automation.

The Second Step: Since it may be many years before Maine has the resources to implement the full five node system, it is important that the progress made to date be utilized to the greatest possible extent. The first task for the Project Director should be to implement a system to expand the use of the current OCLC cataloging (by a method such as that used in Mississippi, or Wisconsin) and to develop a methodology (based on adding holdings to existing bibliographic records and using Bibliofile, LSSI, or Mitinet to add new titles to the Maine database) for increasing the scope of the machine-readable records available.

The Third Step: Simultaneously, the Project Director should design a detailed Request for Proposals (RFP) for the five-node installation described above, with the design specifying the probability of a gradual building towards the final network as money becomes available and emphasizing the need for linkages between the nodes. There will almost certainly be a node-by-node growth of the final network, with priorities and impacts carefully mapped beforehand. It is likely that new automation projects will be implemented by some Maine libraries during the planning period for statewide automation. Thus, standards should be developed for communications between acquired automated systems. These standards should be based on the work being done by the Automation Vendors Advisory Committee (AVAC) to develop interface standards expanded from those of the Linked Systems Project (LSP).

The Fourth Step: With a vendor or vendors provisionally selected based on RFP responses, the Project Director will finalize legislative requests for network staff and resources.

New and Emerging Technologies

Technologies and their resultant products are constantly evolving. What is appropriate today may not be appropriate in the future. Laser disks, alternate telecommunications techniques, and alternate forms of publishing will all impact on library services.

The plan presented in this report reflects today's world. It must be periodically re-assessed to ensure that it matches tomorrow's. Technology will not solve all library problems; it will, however, open new possibilities of service.

APPENDIX A

SELECTING AN AUTOMATED SYSTEM

This appendix presents a selection process which Maine should follow to improve the probability that the system(s) selected will meet library needs. When a formal selection process such as the one outlined is not followed, it is possible to procure and install a system which, after months of operation, is found to inadequate. This appendix recommends some specific procedures, offers cautions, and describes a proven sequence of activities.

Missing Features

In many cases the vendor's system does not provide all of the features and capacity needed. Certain features of a system may be promised to be available "soon" after system procurement, but in fact do not arrive for months or even years. If the missing feature is critical for operations and the vendor's commitment to supply this feature is used as a basis for selecting that vendor, risk of project failure is high. The selection process must recognize this risk and include contractual guarantees which reduce the risk.

Inadequate Capacity

Another very serious problem experienced by libraries with automated systems is the lack of adequate system capacity to perform the required library functions at the required level of activity. When this occurs, the system is overloaded; the operational capacity of the system has been exceeded and the effect on the user is slower and slower response time. When the response time becomes so slow that the necessary activities cannot be completed, there is the choice of abandoning the system or purchasing additional hardware (disk drives, processor memory) or a larger computer; in most cases the latter choice is selected, and new unexpected costs are incurred.

In some cases this new or upgraded equipment is necessary because the number of titles, patrons, volumes, circulations, or catalog searches has been underestimated or use of the system has been expanded by adding previously unplanned libraries or functions to the system. In these cases the purchaser has been responsible for exceeding the capacity of the system, and is therefore responsible for the extra costs.

The more serious situation is the one beyond the purchaser's control. The required functions have been clearly stated (Check-out, Boolean searching, MARC record edit, interfaces), the activity expected on the system has been delineated (6 million searches, 60,000 overdue notices, 30,000 new titles added each year), the response time required is listed (2-5 seconds average and peak to checkout, 5-10 seconds to search, 5-6 seconds to add a new title,), and the vendor guarantees that the system, with the configuration and cost proposed by the vendor can meet these requirements -- and it doesn't. Benchmark and acceptance tests and contractual remedies must be required in order to prevent this situation from occurring in Maine.

The Selection Process

The selection process described is used for the purchase of any turnkey system (where the equipment is owned by and will reside in a library or its data processing center); in a turnkey system, one vendor has designed the system, written the software, delivered the hardware, installed the system, and trained the library staff. Most of these recommendations also apply when the vendor provides software to operate on hardware supplied by another vendor. In this case extreme care must be taken to create guarantees with accountability on the part of all the vendors.

Transaction Volume

Requirements are defined in terms of unique titles, volumes, patrons, circulation transactions, online searches, etc. The annual volumes and/or changes to these figures are determined (new titles, discards, patron changes, new patrons, new volumes, etc.). When libraries are to share a system, extreme care should be taken in cumulating the total transcation load for all libraries which will use the system.

Terminals

The number of terminals at each library and branch is defined, taking into account the level of participation at the location. The approximate transaction load that occurs at each location and the hours each location is in operation should be determined.

Average Hourly Load

The average hourly transaction mix is calculated by dividing the annual transaction data (e.g., 2 million checkouts, 10,000 new titles, etc.) by the annual hours of operation for a particular transaction type (60 hours per week x 52 weeks per year = 3120 hours per year for circulation, 20 hours per week x 48 weeks per year = 960 hours per year for material updates, etc.) to determine the average hourly transaction rate (2,000,000 checkouts/3120 hours = 641 checkouts per hour, 10,000 titles/960 hours = 10.4 new titles per hour). Average hourly transaction rates should also be calculated for item searches, patron searches, title searches, subject searches, fines paid, reserves placed, holds placed, etc.

Peak Load

Given the average hourly load calculated above, an estimate must be made of the peak load. The peak load may occur at a specific time in the evening at a public library, or the week before finals at an academic library. The peak load is generally from 2 to 4 times the average load, with multi-type libraries producing the lowest ration. In the case of defining the requirements, it is better to estimate on the high side rather than the low side.

Write the RFP

The next step is to write a Request for Proposals (RFP). The RFP should describe all of the features and services required of the system; each feature/service should be designated as mandatory, essential, desirable, or useful (or any other set of terms which appears appropriate). There are many excellent RFPs which have been developed by other libraries, and can be used as models.

It is vital that a formal written RFP be produced; the use of questionnaires, demonstrations, interview forms, and telephone or personal conversations is not sufficient to select the vendor of a major system. The principal purpose of an RFP is to obtain formal written proposals from several vendors; these proposals describe the vendor's product in terms the purchaser should understand. The RFP also forces the purchaser to define exactly what is desired, and lessens the possibility that the purchaser and the vendor will make incorrect assumptions about what is needed and what is being delivered.

Transaction Mix

Included in the RFP should be a listing of the per hour average and peak load requirements for each type of transaction to be performed by the system (check-ins, holds, searches, new titles, etc.). This is a very important part of the RFP. Without this table the vendor and the purchaser do not have sufficient information to determine, prior to system installation and actual operation, whether the system will handle the necessary load. With this table, it will be possible to test the vendor's product prior to acceptance of the system and payments to the vendor.

These figures should be the anticipated figures for the last year of anticipated life of the system, as well as for the first year, in order to indicate the amount of expansion capability needed. Vendors should be required to indicate all equipment and software needed in the last year.

TABLE 1

Example of Transaction Mix Table

Transaction Type	Annual	Average Load (per hour)	Peak Load (per hour)	Remarks
Checkouts	4,488,000	1,425	3,800	
New Titles Added	18,900	6	20	
Titles searches	315,000	100	10	(Willing to limit or postpone searches by library staff for 30 minutes during peak load, IF peak load is less than 30 minutes per half day.)

(etc.)

Response Time

The RFP should also include the response time requirements for each type of transaction, for both average and peak load (e.g., searching: 5 seconds for the average load and 10 seconds for the peak load, and check-out or check-in: 2 seconds for the average load and 5 seconds for peak load, etc.)

The Response Time Table for average and peak load response time is tied to the average and peak load conditions defined in the Transaction Mix Table described above; the actual conditions (transaction mix) during a particular time period (e.g., 30 minutes) determine whether the system is under average or peak load conditions. ONCE THAT HAS BEEN DETERMINED, the appropriate response time table (average or peak) is used to compare with the actual system measurements of response time in order to judge the systems performance.

TABLE 2

Response Time Table

Transaction Type	Average Load Response Time (seconds)	Peak Load Response Time (seconds)
Check-in	1.5	4.5
Checkout	1.5	5.0
Title search	3.5	10.0
Add new title	5.0	12.0
Add new patron	3.0	5.0
Revise patron record	2.5	4.0
(etc.)		

Terminals and File Sizes

The number of terminals and their location plus the number of titles, items, and patrons in the system should be listed for the first and the last year of system life.

Interfaces with Other Systems

In addition to the need for an interface between nodes, there is a need to require an interface between the automated system and the major acquisition (book jobbers), COM, retrospective conversion vendors, and bibliographic utilities.

Evaluate the Proposals

Vendors tend to portray their product in the most favorable light. This is quite reasonable; unfortunately, some vendors also tend to exaggerate the functions of the product, write the text in such a manner that it is difficult to determine whether something is available now or will be available someday, and omit the product or service deficiencies.

The RFP can tend to reduce some of this confusion by providing precise definitions of status terms such as "operational", "in testing", "in development", "in planning", and requiring the vendor to use these terms in the proposals. Detailed telephone interviews with several current users of each vendor's product will likely uncover some of the major advantages and disadvantages of each product. The use of a formal RFP will let the vendors know that they are in a competitive situation; the vendors are much more likely to minimize their prices and agree to user provisions in the RFP in a competitive situation. This factor alone justifies the effort of producing a formal RFP.

The vendors' proposals should be reviewed, evaluated against a pre-determined set of weighed evaluation criteria (users should be contacted as part of the evaluation process), and a vendor selected.

When evaluating proposals from different vendors, consideration should be given to system features, initial and on-going operating costs, level of performance for the projected workload, expansion capabilities and ability to provide staged growth in the number and activity levels of users, satisfactory benchmark testing, existing users' evaluation of vendor and system capabilities and performance.

Testing

The RFP should also define the acceptance criteria for the system, including benchmark and acceptance testing. After the library has reviewed the various vendor proposals and has selected a single vendor, the vendor, at the vendor's expense, must perform a benchmark test on existing equipment at the vendor's site or an existing user's site. The purpose of a benchmark test is to prove that a vendor's system can CURRENTLY meet the functions and performance requirements as defined by the library testing the system.

The vendor will perform these types of tests on two different occasions (Benchmark and Acceptance Tests), and under two different sets of testing conditions (initially on the vendor's or another suer's site, and finally on the evaluating/testing library's own site). During both the benchmark and acceptance tests the vendor must accomplish two things:

1. The vendor must demonstrate (by using a live online system) that the FUNCTIONS available with the system meet the functional requirements as defined in the RFP; how well does the system perform check-in, check-out, various types of searching, adding new records in batch and online, modifying existing records online, fines, holds, reserves, reserve room checkouts, etc.?

2. The vendor must prove that the system can handle the PERFORMANCE requirements established by the library ; this is accomplished by conducting a live online full-load performance test of the system - by creating the online transaction load and transaction mix defined in the RFP. The vendor must run both the average hourly load and later the peak load transaction mix. During both portions of the performance test (average and peak loads) the response time of all types of transactions will be measured. The comparison between the manually measured response time from the performance test and the response time table from the RFP will determine the success or the (relative) failure of the performance portion of the test.

Benchmark testing is the only real link between the requirements of the user and the system proposed by the vendor. The vendor translates the user's requirements and functional specifications into an actual hardware and software configuration. The user must independently determine that the hardware and software proposed will fit his requirements BEFORE the user invests heavily in site preparation, file conversion and bar code labeling, staff training, and any direct payments to the vendor. If the user installs the proposed configuration without a benchmark test and the system cannot meet the user's workloads, it is the user, not the vendor, who must pay for additional equipment. Although vendors do not encourage benchmark testing, it is the only way to be certain that all of the bid responses fulfill the requirements. However, live testing of large systems is extremely difficult. If a benchmark tests cannot be performed, extreme care must be taken to obtain contractual guarantees that the vendor will supply at no cost, anytime during system life, any additional hardware and software necessary to meet contracted file sizes, response times, and transactions.

Contracts With The Vendor

In most cases, the vendor will offer a "standard" contract to be signed. Don't sign it. The vendor's contract is written to the advantage of the vendor. Carefully read the vendor's contract, define what is to be added, changed, or deleted, and present the ideas to your own legal counsel. Be sure that the contract clearly states that the system to be installed must meet the functional and performance requirements as stated in the RFP; it is also quite important to make the library's RFP and the vendor's proposal a part of the contract.

Remember, the library is buying a CAPABILITY or SERVICE, as defined by the FUNCTIONAL and PERFORMANCE requirements stated in the RFP, and NOT "a cpu Model XYZ and two disk drives Model ABC". The hardware and software are merely the system the vendor is supplying to meet requirements. The contract should state this in the context described.

If the requirements are not met, the contract is void and the vendor must remove the equipment. (In most vendor standard contracts the vendors have met their obligations and expect the full payment or a large percentage of the full payment, when they deliver and install the defined hardware and software - whether the library's requirements have been met or not.)

Acceptance Test

An acceptance test ensures that the configuration installed by the vendor fully meets the user's functional and performance requirements. Acceptance testing occurs on new equipment installed in the testing library's facility; this is the equipment and configuration that the library will purchase and own once the library has accepted the system and paid the vendor.

The acceptance test is similar to the benchmark test, except that the equipment is installed at the purchaser's site; the files are its own, the books, patron cards, etc., are also its own. All functions and services of the system should be tested as well as the performance. The consequences of successful/unsuccessful testing are the same as in the benchmark test. The system is not fully accepted or the final payments made until the average and peak load tests are successful. If the vendor cannot meet these requirements, the vendor must remove all the equipment at no cost, and another vendor may be selected. (In practice the contract provision to provide additional equipment at no cost is exercised before any thought is given to cancelling the contract)

The rigid constraints on the acceptance are critical. Once the system is accepted and the vendor has been paid, there is little leverage to influence the vendor, and remind the vendor of commitments. The library is much better off to test the full system on its own hardware installation and assume that any future system improvements are enhancements which should not be critical to the current operation of the system.

Possible Local Development of an Automated System

The commercial library automation system vendors have each spent millions of dollars developing the software for exceedingly complex library operations. These high development costs have been spread among many purchasers, each of whom is able to modify the commercial system to its own needs through the use of option tables. In view of these costs, the complexity of the computer programs, the intricacy of the MARC format, and the high response time requirements, developing a local automated system should not be considered, either in-house or under an individual development contract, if an available commercial automated system will meet most needs.

APPENDIX B

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

(Compiled by Karl Beiser, Microcomputer Specialist, Maine State Library)

LIBRARY	APPLICATIONS
Abbe Museum of Stone Age Antiquities Bar Harbor, ME 04609 Leslie Blain 288-3519	Catalog card typing
Abbott Memorial Library Dexter, ME 04930 Susan Abel 924-7292	Public access, staff computer literacy
Alcohol & Drug Education Services Div. Library Stevens School Complex, SHS 57 Augusta, ME 04333 Lyn McHatten 289-3876	Film scheduling, production of confirmation forms, word processing
Auburn Middle School Library Auburn, ME 04210 Betty Pettis 784-1356	Word processing
Bangor Theological Seminary Library Bangor, ME 04401 Clifton G. Davis 942-6781	Filing tasks
Belfast Area High School Library Belfast, ME 04915 Linda Gustafson 338-1790	Catalog card typing, bibliographies, av inventory
Biddeford High School Library Biddeford, ME 04005 Sylvia Coulombe 282-1596	Bibliographies, circulation (using profile III+), serials tracking, serials union list for four local libraries, video log
Bigelow Laboratory for the Ocean Sciences Library Boothbay Harbor, ME 04538 Pamela Shepard-Lupo 633-2173	Database searching, OCLC dial access, book catalog for Fisherman's Library, word processing, serials management
Bowdoin College Library Brunswick, ME 04011 Arthur Monke 725-8731	Bibliographies, OCLC access, online database searching, word processing
Brooksville Free Public Library Brooksville, ME 04617 Barbara Brainerd 326-4518	Addressing labels and envelopes, annual report, catalog card production, mailing list maintenance, online catalog

APPENDIX B

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Buker Junior High School Library Augusta, ME 04333 Audrey Conant 622-7121	Catalog card production, card-based union list of av resources
Central Aroostook High School Library Mars Hill, ME 04758 Betsey York 425-2811	Inventory listings
Central High School Library East Corinth, ME 04427 Marianne Fricke 285-3326	Grade reporting, student access
Central Maine Medical Center Library Lewiston, ME 04240 Maryanne Greven 795-2560	Online database searching, interlibrary loan processing, serials management, statistical reporting, mailing lists, word processing
Central Maine Power Company Library Augusta, ME 04336 Alan King 623-3521	OCLC access, online database searching, interlibrary loan processing, acquisitions, serials management
Colby College Library (Administration) Waterville, ME 04901 Frances Parker 873-3285	Communication with college VAX system, bibliographies, word processing, reserve book lists, statistics and graphs
Colby College Library (Cataloging) Waterville, ME 04901 John Likins 872-3289	OCLC terminal, word processing, electronic spreadsheet application, graphics
Curtis Memorial Library Brunswick, ME 04011 Brian Damien 725-5242	OCLC online cataloging and interlibrary loan
Deering High School Library Portland, ME 04103 Doris V. Chapman 774-7855	Catalog card production, overdues management, student pass system
Dirigo Middle School Library Dixfield, ME 04224 Dinah Tague 562-7552	AV inventory, av software catalog, word processing, student access, reading program management
Downeast School Library/Media Center Bangor, ME 04401 Carol Horne 947-6709	Overdues management

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Dyer Library and York Institue Museum Saco, ME 04072 Stephen Podgajny 282-3031	Budget reports, local history & museum database, book lists, online database searching, public access
Eastern Maine Med. Ctr., Health Science Library Bangor, ME 04401 Sue Jagels 945-8228	Online database searching on BRS, DIALOG, word processing
FMC Corporation Library Rockland, ME 04841 Barbara Swift 594-4436	Online database searching
Falmouth High School Library Falmouth, ME 04105 Deanie Stetson 781-2077	AV catalog, billing, catalog card production, crossword puzzles, label production, lettering, overdues management, reserve lists, word processing, library computer aid program
Gardiner Public Library Gardiner, ME 04345 Glenna Nowell 582-3312	Registration file, community resources file, word processing, overdues management
Georges Valley High School Library Thomaston, ME 04861 Linda Thompson 354-2502	Student access in the library
Gray-New Glocester Jr-Sr HS Library Gray, ME 04039 Susan Chapman 657-3323	AV hardware and software inventories, budgeting, catalog card production, circulation, bibliographies, magazine inventory
Grenville High School Library Greenville, ME 04441 Linda Hubbard 695-2226	Online catalog (planned)
Guilford Memorial Library Guilford, ME 04443 Nickee Morizzo 876-4547	Registration file, public access, word processing
Guilford Middle School Library Guilford, ME 04443 Caroline Fitz-Patrick 876-3386	AV inventory, bibliographies, catalog card production
Hodgkins Junior High School Library Augusta, ME 04333 Audrey Conant 623-1188	Card-based union list of av resources

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Houlton High School Library Houlton, ME 04730 Garth Gooding 532-6551	Word processing
Kennebec Valley Vocational Tech. Inst. Library Waterville, ME 04901 Janet Sibley 873-6133	Card typing, overdues management
Kennebunk Free Library Kennebunk, ME 04043 Barbara Emery 985-2173	Public access
Kents Hill School Library Kents Hill, ME 04349 Bonnie Dwyer 685-4914	Catalog card production
Leonard Junior High School Library Old Town, ME 04468 Peggy Boone 827-7174	Overdues management
Lewiston Public Library Lewiston, ME 04240 Rick Speer 784-0135	Online database searching, word processing
Lincoln Academy Library Newcastle, ME 04553 Cynthia Arnold 563-3596	Overdues management, circulation (with TRS-80)
Lincoln Elementary School Library Augusta, ME 04330 Audrey Conant 623-1859	Catalog card production, av hardware inventory union list for 6 schools
Machias High School Library Machias, ME 04654 Elizabeth G. Temanson 255-3812	Overdues management
Maine Department of Education Library Augusta, ME 04333 Dennis Kunces 289-5815	Software inventory, newsletter, mailing lists, word processing
Maine Historical Society Library Portland, ME 04101 Linda Jayes 774-1822	Catalog card production, personalized for letters
Maine Maritime Academy Library Castine, ME 04420 Charles Lumpkins 326-4311	Database management, serials control, student access, word processing, electronic spreadsheet applications, OCLC cataloging, OCLC interlibrary loan

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Maine State Archives Library Augusta, ME 04333 Pat Lincoln 289-5778	Indexing large collections by subject and name
Maine State Library (Collection Services) Augusta, ME 04333 Bonnie Collins 289-3328	Acquisitions, mailing lists, section manual, serials check-in, statistics, word processing
Maine State Library (Handicapped Services) Augusta, ME 04333 Louise Hinkley 289-3959	Mailing list maintenance, personalized form letters
Maine State Library (ILL/OCLC) Augusta, ME 04333 Emily A. Herrick 289-3561	Interlibrary loan on OCLC, bibliographic queries
Maine State Library (Information Exchange) Augusta, Me 04333 John Boynton 289-2956	Maine Resources Bank
Maine State Library (Media Services) John Boynton 289-2956	Inventory, mailing list maintenance, word processing
Maine State Library (Reference Dept.) Augusta, ME 04333 Donald Wismer 289-3561	Statistics for annual reports, catalogs, directories, mailing list maintenance
Maine State Library (Special Services) Augusta, ME 04333 Benita Davis 289-2570	Catalogs, procedure manuals, statistics, mailing lists
Manchester School Media Center Library South Windham, ME 04082 Bevalie Marean 892-38343	Bibliographies, word processing, Overdues management, ordering supplies, fines list, ordering books
Maranacook Community School Library Readfield, ME 04355 Edna Mae Bayliss 685-4923	

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Mattanawcook Academy Library Lincoln, ME 04457 Earlene Aylward 794-6711	AV inventory, av software catalog, word processing, catalog card production, label production, newsletters, study hall lists
McArthur Public Library Biddeford, ME 04005 Bob Filgate 284-4181	Phono record acquisitions analysis, overdues management in children's room, budget analysis, index of obituaries, circulation analysis, trial balance calculation
Medomak Valley High School Library Waldoboro, ME 04572 Sherrill Osgood 832-5389	AV equipment and lamp inventories, circulation, film orders, label production, lists, overdues managment, av catalog, student records
Mercy Hospital Library Portland, ME 04104 Mary Anne Toner 879-3365	Word processing, online database searching, interlibrary loan
Messalonskee High School Library Oakland, ME 04963 Sally Anderson 465-7381	AV catalog, bibliographies, catalog card production
Mid-Maine Medical Center Library Waterville, ME 04901 Cora Damon 872-1224	Online database searching, interlibrary loan
Miles Memorial Hospital Medical Library Damariscotta, ME Pay Byers 563-1234	Database management, online database searching, word processing
Morse High School Library Bath, ME 04530 Alice Douglas 443-9706	Bibliographies, book ordering, catalog card production, equipment inventory, label production, serials records, newsletter, book pockets, vertical file subject heading thesaurus, videotape list
Mount Desert Island High School Library Mount Desert, ME 94660 Paul R. Hinton 288-4703	Catalog card production
Mt. Ararat High School Library Topsham, ME 04086 Janet Anderson 729-8761	Bibliographies, book ordering, equipment inventory, film orders, serials records, overdues management, word processing

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTER IN MAINE

LIBRARY	APPLICATIONS
Mt. View High School Library Thorndike, ME 04986 Linda Lord 568-3255	Catalog card production
Narraguagus High School Library Harrington, ME 04643 Joan Meserve 483-2747	Catalog card production, student access
North Gorham Public Library Gorham, ME 04038 Virginia Rundell 892-2575	Catalog card production, games for children
North Yarmouth Academy Library Yarmouth, ME 04096 Barbara King 846-3588	Student access, word processing
Northeastern Maine Library District Bangor, ME 04401 Karl Beiser 947-8336	Demonstrations and workshops, flyers and newsletters, mailings
Northern Maine Vocational Techinical Inst. Library Presque Isle, ME 04769 Margaret Coffing 769-2461	Catalog card production, word processing, statistics management
Oak Grove-Coburn School Library Vassalboro, ME 04989 Loyce G. Hayslette 872-2741	
Old Town High School Library Old Town, ME 04468 Julie Tallman 827-3323	Budget, catalog card production, student access, bibliographies, overdues management
Osteopathic Hospital of Maine Library Portland, ME 04102 Janet Morelli 774-3921	Online database searching
Oxford Hills High School Library South Paris, ME 04281 Dorthe Hillquist 743-8914	Overdues, bibliographies, av catalog
Oxford Hills Junior High School Library South Paris, ME 04281 Bruce Bierce 743-5946	Student access, catalog card production, overdue lists, av inventory control, keyboard practice, periodical records, grading, math programs for student use

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Pen-Bay Medical Center Library Rockland, ME 04841 Cindy Sheldon 594-9511	Online database searching, statistical analysis for department
Piscataquis Community High School Library Guilford, ME 04443 Sharon Humphrey-Mason 876-4503	Circulation, catalog of av software holdings in printed form
Portland Public Library Portland, ME 04101 Edward Chenevert 773-4761	Statistical analysis of library activity, word processing, bibliographic control
Portland Public Library (Peaks Island Branch) Portland, ME 04108 Louis Capizzo 766-5540	Public access, circulation of computer (VIC-20)
Southern Maine Library District Portland, ME 04101 Shirley Helfrich 773-4761	
St. Joseph's School of Nursing Library Bangor, ME 04401 Catherine Smith 947-8311	Online database searching, journal listings, catalog card production, label production
Thornton Academy Library Media Center Saco, ME 04072 Nancy McReel 283-3861	Bibliographies, circulation, order lists, overdues management, student and teacher access, word processing
Unity College Library Unity, ME 04988 Dorothy Quimby 948-3131	Mailing lists, catalog card production, filing, newsletter, serials records, staff computer literacy, word processing, label production, overdues management, bibliographies, journal records, donation records
Univ. of New England, Coll of Osteo. Med. Library Biddeford, ME 04005 Katharine Seaward 283-0171	Online database searching of BRS, DIALOG, NLM, OCLC interlibrary loan, cataloging, in-house databases
University of Maine at Augusta Library Augusta, ME 04330 Donald C. Borderick 622-7131	Word processing, online database searching (DIALOG, WILSONLINE), OCLC dial access

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
University of Maine at Farmington Library Farmington, ME 04938 Rick Holmes 889-3501	Word Processing, periodicals holdings lists, special collections holdings lists, mailing lists, OCLC communications, online database searching (BRS, CompuServe)
University of Maine at Orono Library Orono, ME 04469 Sam Garwood 581-1668	Public use, class assignments, online database searching by staff and end-users, electronic spreadsheet uses
University of Maine at Orono Library Orono, ME 04469 Eric Clower 581-1678	Spreadsheet projections, word processing list management
University of Maine at Presque Isle Library Presque Isle, ME 04769 Ann McGrath 764-0311	Government documents shipping list control, circulation of non-print materials, av equipment control (planned)
University of Southern Maine Library Portland, ME 04103 Ron Levere 780-4280	
University of Southern Maine Library Portland, ME 04103 Lanny Lambert 780-4270	Shelving management
VA Medical & Regional Office Center Library Togus, ME 04330 Melda Page 623-8411	Word processing, database management, online database searching, electronic spreadsheet applications
Waldoboro Public Library Waldoboro, ME 04572 Margaret Bonning 832-4484	
Walker Memorial Library Westbrook, ME 04092 Carolyn Watkins 854-2391	Book lists, registration file, word processing, borrower's file, new book list, circulation data
Waterboro Elementary School Library E. Waterboro, ME 04030 Lynn Sudlow 247-6126	Catalog card production, overdues management, word processing

APPENDIX B (cont.)

LIBRARY USERS OF SMALL COMPUTERS IN MAINE

LIBRARY	APPLICATIONS
Waterville Junior High School Library Waterville, ME 04901 Dave Anderson 873-2144	Catalog card production, word processing lists, overdues management, budget management, purchase orders, inventory, bibliographies
Weatherbee School Library Hampden, ME 04444 Gretchen Greiner 862-3254	AV catalog, bibliographies, book ordering, catalog card production, database management, student and staff use
Williams Junior High School Library Oakland, ME 04963 Sally Anderson 465-3254	AV catalog, bibliographies, catalog card production
Winslow High School Library Winslow, ME 04902 Jean Pernice 873-2133	Bibliographies, budgeting, catalog card production, word processing
Winslow Junior High School Library Winslow, ME 04902 Kathy Foss 873-4480	AV catalog, catalog card production, periodical list
York School Department York, ME 03909 Jeanne Gamage 363-3403	Student and teacher access